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Kansas Medical Society

DECEMBER 1935

THE VALUE OF POST-MORTEM EXAMINATION TO CLINICAL MEDICINE—C. Alexander Hellwig, M. D., Wichita . . . . . Page 485

DIVERTICULOSIS AND DIVERTICULITIS OF THE COLON —C. C. Underwood, M. D., Cleveland, Ohio . . Page 448

UNUSUAL CONDITIONS AFFECTING THE KNEE JOINT —O. R. Brittain, M. D., Salina . . . . . Page 502

CHORIOEPITHELIOMA—Wilfred Cox, M. D., Wichita . . . . . Page 505

THE THERAPEUTIC EFFECT OF HEAT AS APPLIED WITH THE ELLIOTT TREATMENT REGULATOR—A. J. Revell, M. D., Pittsburg . . . . . Page 507

THE EFFECTS OF AMIDOPYRINE AND PHENOBARBITAL ON THE BLOOD CELL COUNT OF WHITE RATS— Sloan J. Wilson, M. S., Wichita . . . . . Page 510

COMPLETE TABLE OF CONTENTS . . . . . Page 4

VOLUME XXXVI NUMBER 12

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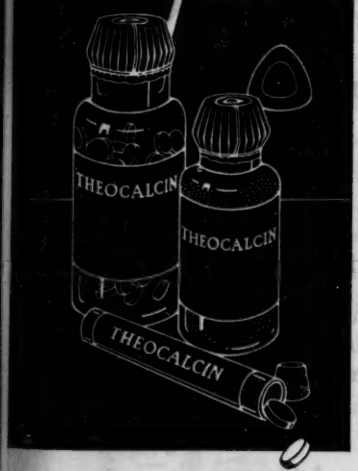

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TABLE OF CONTENTS

ORIGINAL ARTICLES

The Value of Post-Mortem Examination to Clinical Medicine—C. Alexander Hellwig, M.D., Wichita 485
Diverticulosis and Diverticulitis of the Colon—C. C. Underwood, M.D., Cleveland, Ohio . . 488
Unusual Conditions Affecting the Knee Joint—O. T. Brittain, M.D., Salina 502
Chorioepithelioma—Wilfred Cox, M.D., Wichita . 505
The Therapeutic Effect of Heat as Applied with the Elliott Treatment Regulator—A. J. Revell, M.D., Pittsburg 507
The Effects of Amidopyrine and Phenobarbital on the Blood Cell Count of White Rats—Sloan J. Wilson, M.S., Wichita 510

EDITORIAL

Dr. J. F. Hassig—President 513
The Right To Die 514
"The Doctor and the Public" 515

MISCELLANEOUS

President's Page 512
Laboratory—Training of Laboratory Technicians—Philip Hillkowitz, M.D., Denver, Colorado . 516
Tuberculosis Abstracts 518
Medical Literature—Will C. Menninger, M.D., Topeka 519
Medical Economics 523
News Notes 528

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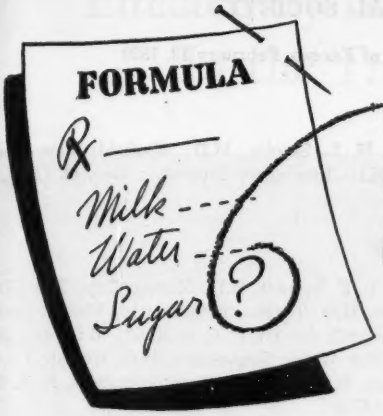

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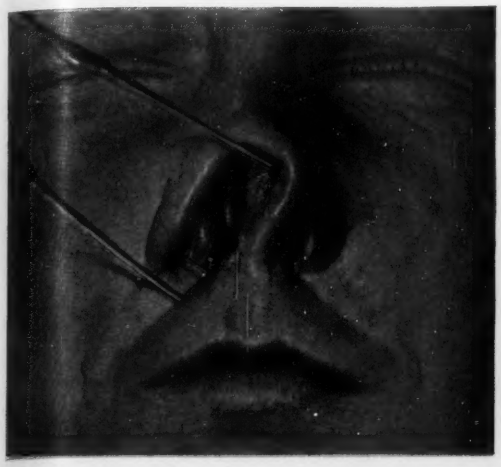

Figure 1— Time, 2:15 p. m. Before treatment.

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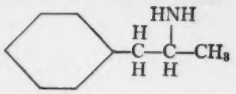

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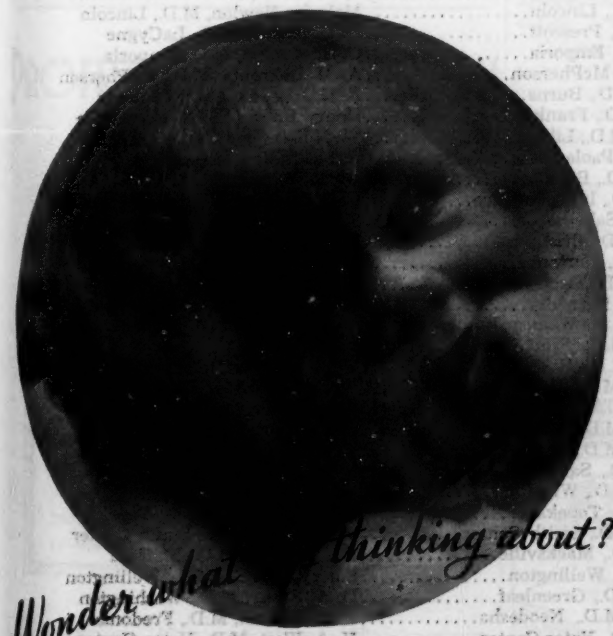

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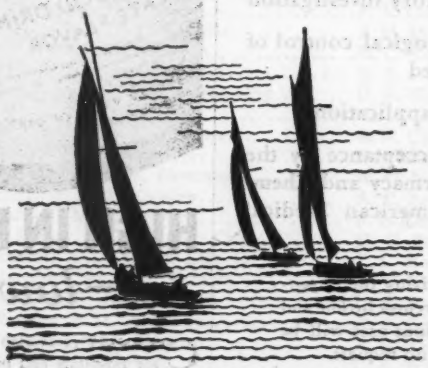

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THE VALUE OF POST-MORTEM EXAMINATIONS TO CLINICAL MEDICINE†

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The superintendent of Mount Sinai Hospital in New York[1] estimates the cost of a post-mortem examination to be $92.40. This does not include the time and energy of the people engaged in obtaining permission. The time which a complete and careful autopsy demands, including microscopic, often chemical and bacteriologic examinations, with detailed records, illustrated frequently by photographs, is not less than five hours.

I have often asked myself, whether the knowledge gained from a routine clinical autopsy is really worth the time, energy and money expended.

Everybody knows that medical schools need a large number of autopsies for the teaching of students and for investigation. But how about general hospitals as we have them in our city? Why does the American Medical Association regard the percentage of autopsies as an index of the efficiency of a hospital? In order to be approved for training interns, every hospital must have autopsies performed upon at least fifteen per cent of its deaths. Is it only to live up to these requirements, that our voluntary hospitals should expend such a huge amount of energy?

During the last twenty years, 351 articles have been written on autopsies. The authors are, in the order of frequency, pathologists, physicians, both general practitioners and specialists, hospital superintendents, interns, a few undertakers and one rabbi. The basic question of whether autopsies are at all desirable is quite naturally affirmed by all but one of the contributors; the dissenting voice coming from an anonymous editorial writer of an undertaker's journal in Chicago. The training of interns, the post-graduate education of the practicing physicians, the advance of medical knowledge and the establishing of true causes of death and hence placing vital statistics on a sound basis are quoted as the main arguments in favor of autopsies.

Of these 351 papers, a single one stands out by its frankness and fearlessness, namely Cabot's[2] article entitled: "Diagnostic pitfalls identified during a study of 3,000 autopsies." Written in 1912, it pointed out in a very striking manner the large factor of error in a list of twenty-eight special diseases. While it caused resentment on the part of certain clinicians, in many others it served to stimulate greater precision in diagnosis. Admitting that the man behind the gun, or the method, makes a vast difference, Cabot concludes from his study of 3,000 cases before and after death, that few of the mistakes could have been avoided and that his figures mirror the diagnostic methods and its limitations of an average American hospital at this time.

Since 1912, wonderful advances have been made through investigations by immunologists and biochemists. Most of these results have been standardized and made available to the physician to supplement the art of history taking and physical diagnosis. Clinical pathology as a new specialty has been established in these last twenty years and already warning voices arise that the practitioner places too much reliance on laboratory reports and that he attributes to them an infallibility with which no pathologist would credit them.

I have made a comparative study of clinical and anatomical diagnoses, certainly not to belittle the clinician's diagnostic ability. For seven years, I was a clinician myself and have often resented the bitter and destructive criti-

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cism all too frequently exhibited at the autopsy table. I felt at these occasions and still do, that the pathologist is not doing a very wonderful thing in pulling out a pneumonic lung and making a diagnosis of pneumonia, or if he finds an unrecognized surgical condition existing in the abdomen, that to make such a postmortem diagnosis, certainly does not require skill.

The only reason why I undertook such a tedious task of going over clinical and autopsy records, was to satisfy my own mind and try to answer the following two questions: (1) Have clinical laboratories proved to be of decided help to the physician, i.e. is the percentage of correct clinical diagnoses as checked by post-mortem findings really better today than it was in 1912.

(2) Have the scientific results in the fields of biochemistry and immunology and their daily application in the modern laboratory improved our diagnostic ability so markedly that we can discard or at least restrict the expensive, cumbersome and often unpleasant method of dead-house pathology.

My series is too small to permit of the same division as made by Cabot and still reach satisfactory percentages. I have followed Karsner's[3] principle of classifying by organs and systems rather than by diseases. His division into gross and minor diagnostic errors was however omitted because I was more interested in the chances of correct diagnoses. My 550 cases were divided into three groups: Agreement of clinical and anatomical diagnosis, partial agreement and disagreement.

Two points I would like to stress. (1) In this country, autopsies are made principally on doubtful and very difficult cases. Therefore, the accuracy of ante-mortem diagnoses, in general, is without doubt considerably better than these statistics would indicate. (2) It should be stated that the post-mortem pathologist, contrary to the usual idea and his own early assumption is not infallible. Not only is his interpretation liable to be faulty, but he cannot find what is not there to be found. Not every perversion of function is accompanied by visible changes. Chemistry often comes to our aid and serology may reveal facts when the anatomical method fails. I must confess that some small children die from causes which remain to me a complete mystery even after the autopsy. In 1.4 per cent of my cases, a complete explanation of the cause of death was missing. Still post-mortem diagnosis is vastly more accurate than the clinician is entitled to expect for himself, for the simple reason that he has to make his diagnosis through layers of skin, fat and other structures.

TABLE I

COMPARISON OF CLINICAL AND ANATOMICAL DIAGNOSIS IN 550 CASES

	No. Cases	A	P	D	?	A (%)
Head and Brain	96	63	11	13	9	65.5%
Neck	12	5	2	5		41.7%
Thorax	164	75	25	34	30	45.8%
Abdomen	188	131	30	23	4	64.8%
General Infections	57	33	1	20	3	59.7%
Constitutional Diseases	33	27		6		81.8%
TOTAL	550	334	69	101	46	
PERCENTAGE		60.7	12.6	18.4	8.3	

A—Complete Agreement of clinical and anatomical diagnosis.
P—Partial Agreement.
D—Disagreement.
?—No clinical diagnosis.
A—Percentage of Complete Agreement.

TABLE II

Percentage of correct clinical diagnoses in 1912 (Cabot) and in 1935

	1912:	1935:
Head and Brain	70	73.3 per cent
Heart and Pericardium	55.1	68.2
Lungs and Pleura	55.3	78.5
Liver and Biliary Tract	29.5	59.1
Gastro-intestinal Tract	68.5	74.4
Urinary Tract	43.3	77.6

A comparison of Cabot's and our figures show complete agreement at the successful and the unsuccessful end of the list of diagnoses. Diseases which kill so quickly that the period of observation is very brief, will always show a large percentage of diagnostic failure. At the successful end of the list stand today as in 1912 diseases which are easily recognized by the routine application of laboratory methods.

Diseases listed between these two extremes, show in our series a definite improvement in the percentage of correct clinical diagnoses as compared with the possibilities in 1912. Nevertheless our figures indicate that diagnostic precision has by no means attained the ideal of accuracy. It is discouraging to see that Wilson's[4] statement made in 1915 still holds today, namely that clinical diagnoses in cancer are correct in only about three-fourths of the cases and in tuberculosis in less than one-half. Sixty-eight per cent, our percentage of correct diagnoses in cardio-vascular diseases, is however definitely superior to the figures for 1915 when less than forty per cent could be diagnosed correctly before death.

Without exact clinical diagnosis, the

physician is a mere empiricist groping in the dark. Clinical medicine is ever striving toward improvement of diagnostic methods. The surest criterion of such improvement is to be found in the autopsy.

That modern surgery is based on pathology, nobody will deny. On the other hand, pathology owes much to surgery. "Pathology of the living" as Moynihan[5] has termed the gross and microscopic study of disease processes in the operating room, has given fresh impetus to the study of morbid anatomy. In every surgical periodical, we find noteworthy contributions to pathology written by men who before taking up surgery were assistants in pathological institutes as it is the rule in Germany.

The question presents itself, whether modern surgical pathology has not made dead-house pathology obsolete. I quote Wilson[6] who as pathologist to the Mayo Clinic, certainly cannot be accused of prejudice against surgery: "The surgeon's judgment at the operating table is ripened more by his errors than by his successes, providing he is willing to study his errors post-mortem in detail, unpleasant though it may be. Autopsies made as a routine on the early postoperative deaths occurring in the practice of any good surgeon will show important factors in the cause of death unknown to the surgeon in more than half of the cases." In our series of twenty-seven postoperative autopsies which were performed mainly on doubtful cases, the percentage of unknown factors was much higher, namely 74.1 per cent.

There cannot be any doubt that the best way for physician and surgeon to perfect his efficiency is by evaluating his diagnoses and the results of his treatment at the autopsies of those of his patients who had the misfortune to die. The need of experienced physicians is unquestionably of great importance to public health. What have public health authorities in this country done to secure for the people the undisputed benefits of autopsies? Not one thing. Whatever laws there are, are directed against autopsies and not in favor of them.

As things are today, the only way to obtain autopsies is by approaching the relatives at a most inopportune time. Usually autopsies are asked for as a favor to the physician and rarely offered as a favor to the relatives.

The one argument which, according to Wilson, appeals most to intelligent men is that they ought to know exactly not only the cause of death, but also the incidental diseases of every member of their families. If there be a heritable disease, it should be known. Or it may be that the fatal disease was due to some habit of life which can be avoided by the survivors. If we can make the relative understand the value of post-mortem examinations to his own family, his ignorance of the importance of the autopsy to science, the existence of inadequate laws and the objections of undertakers will all become negligible and he will not only permit, but insist on an autopsy.

"The time has passed when the medical man can hide behind a cloak of priestly authority. He is a human being with all human fallibility engaged in a field of biologic science involving the most intricate living material." (Karsner[7]).

CONCLUSIONS

In 550 cases studied before and after death, there was agreement between clinical and anatomical diagnosis in 60.7 per cent, partial agreeement in 12.6 per cent and disagreement in 26.7 per cent.

Our figures show a definite improvement in the percentage of correct clinical diagnoses as compared with the possibilities in 1912. The accuracy in diagnosis of cancer, tuberculosis and syphilis has less improved than that of cardiovascular diseases. In 74.1 per cent of early postoperative deaths, the autopsy revealed important factors in the cause of death unknown to the surgeon.

In spite of great advances in the fields of immunology and biochemistry and in spite of marked progress in surgical pathology, postmortem examination is still today of greatest value to clinical medicine. As criterion for evaluating diagnostic success or failure, the autopsy is unsurpassed by any other scientific method.

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—JKMS—

If there be a calling which feels its position and its dignity to lie in abstaining from controversy and in cultivating kindly feelings with men of all opinions, it is the medical profession.—Cardinal Newman.

DIVERTICULOSIS AND DIVERTICULITIS OF THE COLON

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CASE REPORT

The patient was a white man fifty years of age who entered the clinic January 4, 1935 complaining that he had recurrent attacks of cramp-like pain in the lower left quadrant of the abdomen and that he had to take bile salts daily. The patient was perfectly well until the age of thirty when he had a perforated peptic ulcer without previous gastric symptoms. He was operated upon immediately and made an uneventful recovery except for drainage. A few weeks later a right inguinal herniorrhapy was performed. Since that time—a period of twenty years—he has had occasional distress in the lower left quadrant of the abdomen associated with lots of gas, which was always relieved by bowel movement or passing flatus. However, he suffered no severe pain until three months prior to admission when he was awakened at night with rhythmic cramp-like pains in the lower left quadrant of the abdomen, associated with audible rumbling of gas and abdominal distension. The following day the temperature rose to 102 degrees F. and remained there for three days, during which time he was confined to bed with almost complete obstipation. On the third day, his bladder became distended and catheterization was necessary. There had been no previous dysuria, and since this attack he was able to void without difficulty; however, he was given prostatic massage daily for a few days. Since this severe attack he continued to have pain in the left iliac fossa and in the left flank, which was always relieved by bowel movement or expelling gas. He had found it necessary to take bile salts daily and had noticed that the stools were small in calibre. A roentgen examination was made a short time before our examination and a diagnosis of carcinoma of the colon (sigmoid) had been made.

When we saw the patient, physical examination showed a well nourished man who did not appear ill. He was sixty-four inches tall and weighed 139 pounds. His temperature was 98.6 degrees F., pulse 76, blood pressure 130 systolic and 90 diastolic. The eyes were normal, the pupils reacted equally to light and accommodation. The teeth were in good repair, and there was no adenopathy. The lungs and the heart were negative. The abdomen was not distended. Two right rectus and one right inguinal scars were present. There was no tenderness, rigidity, hyperperistalsis, palpable organs or masses. Rectal examination was negative, the prostate was slightly tender but not enlarged. The neurological findings were normal. The impression of the examiner was diverticulitis of the sigmoid with probable abscess which had formed at the time of the acute attack of pain three months before the patient came to the Clinic.

Because of the history of obstruction, it was thought wise to proceed with a barium enema first and this showed rather extensive diverticulosis of the lower descending and sigmoid colon, and since there was no evidence of obstruction, studies were made following a barium meal by Dr. Collins who reported a small deformity at the tip of the duodenal bulb probably at the site of the plication for ruptured ulcer in 1914. There was no evidence of activity. The stomach was found to be normal and the gall bladder functioned normally with the cholecystographic dye and showed no evidence of stones. The red blood cells numbered 5,160,000, hemoglobin was 111 per cent and the white cells numbered 6,350. Blood sugar was 101 mg. per 100 cc. fasting and the complement fixation test was negative. Examination of the urine showed no abnormalities.

The patient volunteered the information that his lower abdominal discomfort was relieved almost immediately by the barium enema and that he continued to feel better for two or three days. This interesting observation has been noted by many physicians and has been one effective method of treatment.

The patient was advised to continue on a smooth diet and was given barium sulphate drams one four times per day and to use mineral oil or enemata when necessary rather than laxatives. Starvation was recommended should acute symptoms recur. He was seen three months after his examination at which time he reported that he was feeling perfectly well.

This report illustrates the fact that diverticulosis of the colon may be missed immediately after or during an attack of diverticulitis because either the stomata of the diverticula are occluded by the inflammation or the sacculations are filled with fecal material or exudate.

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Diverticulum is the term applied to a saccular outpouching which may occur in any of the hollow viscera.

Diverticula occurring in the colon were perhaps first described by Cruveilier in 1849, and subsequently by Virchow in 1853, who gave a minute description of peridiverticulitis, to which he referred as a chronic adhesive peritonitis. In 1857 Habershon, a physician, published the first account of diverticulitis written in English. In 1858 Sydney Jones reported a case of acute diverticulitis of the sigmoid which resulted in a vesico-colic fistula. In 1904 Edwin Beer presented a most comprehensive consideration of the etiology and pathology of diverticula of the colon. In 1907 Moynihan's classical paper on the mimicry of diverticulitis of carcinoma appeared, and during the same year W. J. Mayo reported five cases in which a portion of the sigmoid was resected for obstructive diverticulitis with formation of palpable tumor, the first instances recorded in which an actual demonstration of the pathological change in diverticulitis was made during the life of the patient. These descriptions of the clinical manifestations of the disease and its pathology brought forth a rapid succession of contributions by Hartwell and Cecil, Telling, Mummery, Watson Judd and Pollock, Erdman, Rankin and Brown, Edwards Synnott, Hunt and many others. Regardless of the voluminous literature on the subject the medical profession is not adequately informed in regard to its importance as a pathological entity. This statement is proved by the fact that so few cases are diagnosed before being referred for operation or x-ray examination.

Buschi stated that diverticula occur most frequently in the colon, next the ilium, esophagus, pharynx, duodenum and least frequently in the stomach. Diverticula may either be (1) congenital or true, or (2) acquired or false. In the true diverticulum all the layers of the bowel are included in the wall of the sac. In the acquired type the walls of the pouch consist only of mucosa, submucosa and peritoneum. It is a true hernia of the mucosa and submucosa through the muscularis, as the latter terminates abruptly on each side of the mouth of the diverticulum and is absent from its wall. Because of absence of peristalsis in the diverticulum any infected material entering the pouch may be retained and cause diverticulitis.

The chief etiological factor is still a controversial subject, but the most widely accepted theory predicates some congenital anomaly or weakness in the muscularis of the colon, frequently where the blood vessels come through the bowel wall from the mesentery. The fact that cases of diverticulitis occur in unusually healthy individuals who give no history of previous abdominal discomfort or constipation seems to confirm this belief. It would seem however that there must be contributing factors because diverticula of the acquired variety are rarely recognized in individuals under fifty years of age. Such additional factors may be constipation, atrophy from chronic intestinal toxemia or senile deterioration as a result of which certain strands in the muscularis of colon where there is perhaps congenital weakness finally give way and sacculation results.

Diverticula high in the gastric-intestinal tract and in the right side of the colon may be present for years without giving rise to trouble because the bowel contents here are fluid or semifluid. In the colon or especially in the left colon, the condition is different—the contents lose their semifluid character because of stagnation and absorption of water. Thus impaction occurs in the saccular lumina of the diverticula and because of the absence of the muscular coat in the walls of the diverticula, the contents cannot be expelled through the bottle neck stomata into the bowel. This makes it easy to understand why diverticulitis results.

The frequency of diverticulosis is difficult to estimate: Rankin and Brown of the Mayo Clinic reported 1,398 cases of diverticulosis that were discovered in 24,620 examinations of the colon by x-ray, an incidence of 5.67 per cent. One hundred eleven cases of diverticula of the colon were found in 1925 necropsies performed at the Mayo Clinic during the years 1924-1928—an incidence of 5.2 per cent. The actual occurrence for all ages was placed at less than one per cent by these authors as estimated from the finding of 2,310 cases of diverticula of the colon in the course of 765,795 examinations.

An analysis of 157 roentgen diagnoses of diverticulosis of the colon made during the past four years at the Cleveland Clinic shows that 68.9 per cent occurred in patients between the ages of fifty and sixty-nine. The youngest patient was thirty-six and the oldest eighty-one. There were seventy-six women and eighty-one men, so from this we would con-

clude that sex has very little to do with the incidence of diverticulosis. Obesity was present in sixty-five per cent of the cases, twenty-three per cent were of normal stature and twelve per cent were slended.

The sites of the diverticula in our series were as follows: Sigmoid, 104; descending colon, 27; transverse colon, 13; ascending colon, 6; generalized throughout the colon, 17; and the cecum, 2. There were thirty-nine cases of diverticulitis, twenty in men and nineteen in women, an incidence of twenty-five per cent in this series which is high in comparison to previously reported series—the incidence in the Mayo Clinic series of 1398 cases being seventeen per cent and in Edwards series the incidence was 14.6 per cent. However, it is sometimes difficult to be certain whether the patient has diverticulitis or not, and one must remember that many of the cases of diverticulosis are potentially cases of diverticulitis so that the incidence may be higher in the clinics where patients are followed for a longer period of time.

Diverticula of the colon are sometimes associated with diverticula elsewhere in the gastrointestinal tract, especially in the duodenum. There has been considerable discussion relative to the frequent association of bladder diverticulum and diverticulosis of the colon. Cystoscopic examination was made in only eighteen of the 157 patients here reviewed and in only one instance was a solitary diverticulum of the bladder found. However, Dr. Graham showed two cases this year at pathological conference in which bladder diverticulum was associated with diverticulosis of the colon and duodeum (in which vesical, colon and duodenal diverticula were found at necropsy.)

Obstruction developed in six of the thirty-nine cases of diverticulitis and five were operated upon here. Complete resection of the involved area without previous colostomy was performed in one case and a fecal fistula developed which healed spontaneously. Preliminary colostomy was performed in two cases which were closed subsequently because the obstruction disappeared after the inflammation subsided and resection was unnecessary. Two other patients had preliminary colostomy with subsequent resection of the sigmoid. The sixth patient died five days after discharge without operation. Abscesses developed in three cases but only one had to be drained surgically. Enterovesical fistula was suspected in one patient because of the complaint of pneumaturia, but cystoscopic examination showed no evidence of fistula.

In 140 of the 157 cases, there were symptoms that in all probability were related to the colon. The most constant symptom was constipation which was present in ninety-four cases, in nineteen of which diarrhea alternated with constipation. Diarrhea is usually significant of obstruction, but not always because attacks of diarrhea sometimes coincide with and are due to recurrent attacks of inflammation. Seventy-eight patients had pain which varied in character—in some it was a dull ache and in others it came in attacks of colic. Sometimes it was initiated by defecation, passing flatus or taking an enema, and others were relieved by bowel movement. In twenty-eight of the seventy-eight patients, the pain was in the upper left abdomen, it occurred in the left iliac fossa in sixteen, in the epigastrium in sixteen, and in ten the pain was on the right side. Eight patients had pain only when taking an enema. The site of the pain did not always coincide with the segment of the colon most affected by the diverticulosis as indicated by the x-ray examination.

Several patients had no actual pain but complained of vague disturbances in the left side of the abdomen, rumbling noises and windy spasms, flatulance, soreness and fullness of the stomach. These symptoms were more noticeable during defecation or when more than ordinary constipation was present.

It is quite evident from this large group of symptoms that no single symptom, physical sign or laboratory finding is pathognomonic of diverticulosis or diverticulitis of the colon, with the possible exception of the visualization of the diverticula through the sigmoidoscope. On the other hand, if one gathers together all the data afforded by the various diagnostic measures and carefully correlates them with the history and physical findings it is usually not difficult to arrive at the correct diagnosis. Without doubt, the most important single procedure is the x-ray examination of the colon, both after barium meal and barium enema, the latter sometimes being supplemented by air injection. In our series of thirty-nine cases of diverticulitis of the colon, nine were diagnosed clinically. The most important fact to bear in mind is that whenever any patient complains of changes in bowel function, he deserves a careful and painstaking examination including

proctoscopic and stool examinations to rule out the presence of any organic lesion. Proctoscopic examination was made in only eight of the 157 cases of diverticulosis here reported and a diagnosis of diverticulitis was made in one case; however the examiner did not mention whether or not a diverticulum was visualized.

Surgical treatment must always be considered when symptoms of acute diverticulitis are present, especially when the diagnosis is questioned. Surgical judgment has changed considerably since Erdman stated "The acute condition presents but one solution in the absence of contraindications and that is early operation." Experience has shown that perforation with general contamination occurs but rarely, and that when perforation does occur, it is usually a protective one wherein the omentum and appendices epiploical tend to localize the process to the wall of the bowel in which resolution frequently occurs as in the case reported this evening. If the process goes on to abscess formation drainage of course becomes necessary.

In the chronic complicated cases, surgery is definitely indicated; spontaneous and postoperative fecal fistula sometimes must be operated upon; enterovesical, and enterocolic fistula usually require radical procedures. For obstructive diverticulitis, the multiple stage Mikulicz procedure may at times by accomplished with a fair degree of safety, however it usually is better to do a preliminary colostomy or cecostomy, the value of the latter cannot be too strongly emphasized according to Hunt. The Mikulicz procedure may be regarded as the only exception to preliminary drainage. To be specific in the obstructive type of diverticulitis, the type of resection of the sigmoid frequently used for carcinoma should never be used unless a previously made and functioning colostomy exists. Postoperative distension of colon after any operation for obstructive diverticulitis in the presence of diverticula proximal to resection materially increases the danger of acute perforation of one or more of these diverticuli.

Medical treatment of diverticulosis is of about as little importance as are the findings of these little sacculations when they are asymptomatic. The presence of diverticula in the colon in the absence of symptoms is of no more significance than the visualized appendix vermiformis without symptoms. Inasmuch as constipation often is associated with moderate or extensive diverticulosis of the sigmoid and perhaps is a factor in the production of diverticulitis, anticonstipation regimen including bland diet and the use of mild oils is advisable. Equal parts of barium sulphate and calcium carbonate have proved efficacious in the relief of symptoms. Should mild symptoms of diverticulitis occur, continued regulation of the bowels, with external application of heat and the use of bowel antispasmotics usually suffices. Saline irrigations are sometimes useful.

CONCLUSIONS

1. Diverticulosis is quite prevalent occurring in about five per cent of persons who have symptoms referable to the colon, but in one per cent of all persons.

2. Diverticulitis occurs in from seventeen to twenty-five per cent of cases of diverticulosis and in most instances is chronic and subject to exacerbations.

3. The etiology of diverticula is obscure but they probably are due to inherent muscular weakness in the bowel wall plus environmental conditions, obesity and constipation.

4. Diverticulitis probably results from improper emptying of the diverticula with subsequent inflammatory reaction, necrosis and occasional perforation.

5. The relation of carcinoma to diverticulitis is probably incidental rather than actual. In 227 cases at the Mayo Clinic, malignancy was present in four and carcinoma was associated in two of 157 cases here at the Cleveland Clinic.

6. The outstanding symptom of diverticulitis is pain, usually in the lower left portion of the adbomen and it is frequently associated with constipation. Change in bowel habit is a confusing factor.

7. A palpable tumor is commonly found in obstructive diverticulitis which often confuse it with malignancy.

8. Bleeding rarely occurs with diverticulits —when it does occur, an associated malignancy is usually suspected but frequently not found.

9. In a definite percentage of cases, diverticulitis tends to become complicated. The most common complications are abscess, obstruction, fistula and perforation.

10. Treatment of acute diverticulitis consists of watchful waiting while the patient is at rest in bed. Sometimes warm saline irrigations are of benefit. Starvation often is necessary during the acute attack. As process subsides anticonstipation diet and the use of small doses

of mineral oil together with x-ray, barium sulphate, probably prevents complications.

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UNUSUAL CONDITIONS AFFECTING THE KNEE JOINT

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From a consideration of the structure of the knee joint, it would at first sight appear to be one of the least secure of any of the joints of the body. It is formed between the two longest bones, and therefore the amount of leverage that can be brought to bear upon it is considerable. The articular surfaces are but ill adapted to each other, and the range and variety of motion which it enjoys is great. All these circumstances tend to render the articulation very insecure; but nevertheless, on account of the very powerful ligaments which bind the bones together, the joint is one of the strongest in the body, and dislocation without accompanying disease is seldom found.

However the factors competent to resist luxation are not able to protect it from minor injuries. Disease or injury of the knee joint is of frequent occurrence, on account of its superficial position, its exposure to cold and wet, and its liability to minor injuries. A disability of this joint is of major concern because of the important functions of the joint in weight bearing and in walking.

The conditions which claim our attention at this time, most of which are of uncommon occurrence, appear at rare intervals in the regular radiological examinations of the knee, and may be designated as follows: Fracture of the spine of the tibia; loose bodies in the joint; myositis ossificans; rickets; bone tumors; Pellegrini-Stieda's disease; Osgood-Schlatter's disease.

Fracture of the spine of the tibia was known only as a complication of dislocation of the knee previous to the introduction of the use of the x-ray. It is usually the result of violence to the external surface of the leg, causing pressure of the condyle against the spine of the tibia. The x-ray will reveal the line of fracture clearly marked.

Since the injury does not cause complete disability it is well to remember that final recovery may not take place as soon as might be expected from the relative minor injury in evidence on the external surface of the knee. The complete process of bone repair must take place before final recovery.

Loose bodies are sometimes found in the joint cavity. About ninety per cent of all instances of loose bodies in a joint, occur in the knee. They are sometimes free, or less frequently attached to a pedicle. They are developed in several ways, (1) from villous outgrowths from the synovial membrane, (2) from detached osteophytes of osteo-arthritis, (3) from outgrowths of the articular cartilage, and (4) from a number of quite rare conditions, such as organization of a blood clot or from fibrin accumulation.

A knee joint including these bodies may function practically normally except at intervals when the body is caught in a narrow space in the joint, at which time the patient feels a sudden intense and very sickening pain in the joint, with complete loss of function. After a few days the disability ceases, only to have the process repeated at a further time.

Myositis ossificans may develop in a muscle near the joint. It is an ossifying process occurring in muscle or fibrous tissue, and lies near the surface of the bone or apparently in contact with it. In this case it must be differentiated from a new growth of the bone itself. It may also simulate a loose body, but myositis in the vicinity of the joint must be found always adjoining the joint proper, while loose bodies will be found in the cavity of the joint.

Rickets, a one time common disease, is now not seen nearly as frequently as in the past, due to the improved methods of care and feeding children at the present time. The widened flattened diaphysis at the upper end of the tibia with the usual curving of the shaft are characteristic.

The region of the knee joint presents numerous forms of bone tumors, exostoses, osteoma, osteochondroma, giant cell tumor and

sarcoma being among the more common forms.

Osteomyelitis involving one of the long bones entering the joint, more particularly the upper end of the tibia, is referred to, not because of its rarity, but because of the importance of differentiating the disease from other affections of the joint proper. Though osteomyelitis on superficial examination appears to involve the entire joint, close scrutiny will disclose the point of greatest pain and tenderness in the end of the long bone and adjacent to the joint itself. Early in the disease the x-ray appearance of the bone is normal, but later the changes resulting from the pathological process become readily visible.

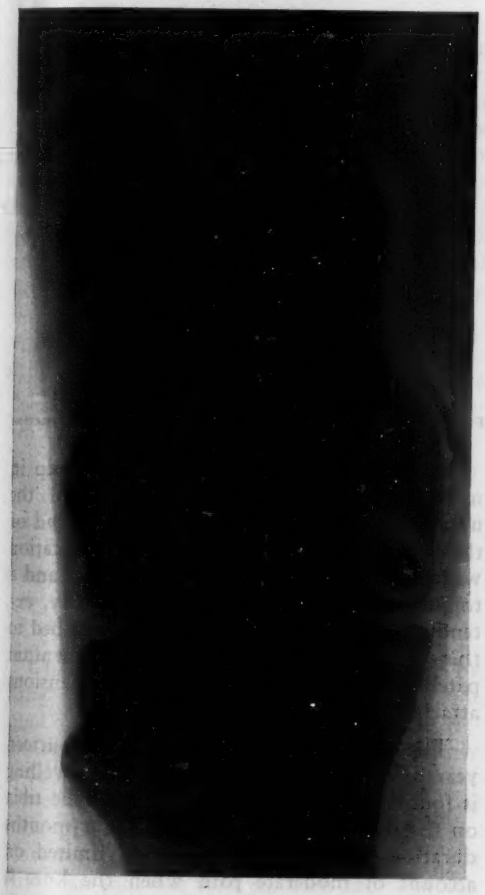

Fig. No. 1. X-ray showing changes in knee joint due to Pellegrini-Stieda's disease

Pellegrini-Stieda's disease is a calcification and ossification of the internal lateral ligament in the region of the medial femoral condyle, the result of trauma. It is of quite rare occurrence, without pronounced clinical symptoms, and may sometimes be found in routine x-ray examination for other conditions. The x-ray reveals a crescent shaped opaque body with the concavity directed toward the condyle, but separated from the latter by a clear space. Fig. No. 1. The ends are often slender. The subpacent condyle presents a normal silhouette. Nothing is seen that suggests any deformity of or depression in the internal condyle, such as might occur with an osseous tearing.

The pathogenesis from the trauma to the fully developed process has been the subject of much discussion and numerous hypotheses. Briefly it has been considered as a small detached fragment of the condyle; or a simple calcification such as occurs near other joints; or a process similar to that which takes place in myositis ossificans. It is probable that calcification readily takes place because of the rich blood supply from the anastomotic vascular network, the presence of connective tissue, and the proximity of the condyle, all of which tend to supply abundant material for calcification. Furthermore, periosteal displacement may cause the bone-like tissue found in the new growth.

Examination soon after injury reveals local tenderness to palpation, swelling and limitation of motion. A hematoma may be found. X-ray films are negative at first, but those taken two to four weeks after the injury show the characteristic calcifying area. Subsequent films show increasing density. Within a few days after the injury the pain and swelling subside, but disability and limitation of motion are quite likely to persist for one to two years.

Osgood-Schlatter's disease is of interest because of its rarity and because of some rather fine points of differentation necessary to distinguish it from other similar affections.

A few cases of this disease have been reported in New York, Boston, and Chicago. In the Cincinnati General Hospital but one case was found in six years. At a recent meeting of the American Roentgen Society in Los Angeles a private laboratory placed on exhibition the films of one case found in that city. However the disease is probably of more frequent occurrence than the records would indicate, since the condition is practically never diagnosed today except with positive x-ray findings, and not all of these cases come for x-ray examination.

Literature descriptive of this condition is quite meager. Rather extensive reports are

given by Osgood and by Schlatter in German, both in 1903, and further description by Bader in 1922, though other writers refer to the disease. It is interesting to note that the first case report was by Dr. Paul Vogt in 1869, which again impels us to admire the diagnostic ability of some of the older practitioners who were without the aid of modern laboratory equipment.

Fig. No. 2. Osgood-Schlatter's disease

Osgood-Schlatter's disease is a non-suppurative, subacute inflammation of the tibial tubercle, believed to be due to trauma incident to repeated pulling of the ligamentum patellae. As might be expected, it is usually found in young people of the athletic type, usually between the ages of ten and sixteen years. The onset is gradual and sudden changes do not occur during the course of the disease. Fig. 2 and 3.

A complete avulsion of a portion of the tibial tubercle may occur from a sudden forcible contraction of the quadriceps extensor. This condition is sometimes classified as Osgood-Schlatter's disease, and gives a similar appearance in the roentgenogram. However, it could not be considered as a true Osgood-Schlatter's disease.

Fig. No. 3. Showing detached fragment and bone detsruction in Osgood-Schlatter's disease

In studying these cases one should keep in mind the anatomy and development of the upper portion of the tibia. The upper end of the tibia develops from one center of ossification which forms the upper articular surface and a tongue-like projection or beak, anteriorly, extending down over the diaphysis. Attached to this tubercle of the tibia is the ligamentum patellae with lateral aponeurotic expansions attached to the shaft of the tibia.

The case here reported is that of a fourteen year boy. On inspection a red tender swelling is found directly over the tubercle of the tibia on the right side. It is of about four months duration. Function is somewhat limited on account of moderate pain when the knee is flexed or forcibly extended. On roentgenological examination we find a portion of the beak of the tibia entirely separated from the main bone. A slight amount of bone destruction is seen immediately beneath the detached fragment. The slight degree and slow

process of this destruction, with absence of suppuration would characterize the process as an erosion rather than a necrosis.

This condition must be differentiated from bursitis with calcification, tuberculosis of the joint, loose cartilage in the joint, and hypertrophic arthritis.

A calcification in the bursae will give a very similar appearance in the roentgenogram. There will however be an entire absence of bone destruction and the disease is most likely to be found in an adult. Tuberuclosis may be differentiated from the fact that the process is of a more diffuse nature, occurring near the joint surfaces, often beginning in the synovial membrane. Though it may penetrate the cartilage, it does not generally extend further than the region immediately beneath the cartilage. The swelling of the joint is of greater extent and more diffuse in character. Loose cartilage in the joint will always be found in a higher position than the location of a detached fragment in Osgood-Schlatter's disease. The position also is likely to be variable. In hypertrophic arthritis the deposit is of more general distribution, other parts of the joint being involved.

The condition should not be difficult to recognize if one but remembers that such a disease exists even though it be of rare occurrence.

CHORIOEPITHELIOMA*

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Chorioepithelioma was first described by Sanger about forty years ago. It is a malignant tumor that develops from the epithelial elements of placental tissue. It most commonly follows the expulsion of a hydatidiform mole, but may date its origin from an abortion or tubal pregnancy or even a normal pregnancy. However, primary chorioepithelioma of the Fallopian tube has been reported and teratoma of the ovary or testicle may develop a chorioepithelioma. The route of metastasis is thought to be through the hypogastric and spermatic veins.

*Read before the Sedgwick County Medical Society, November 19, 1935.

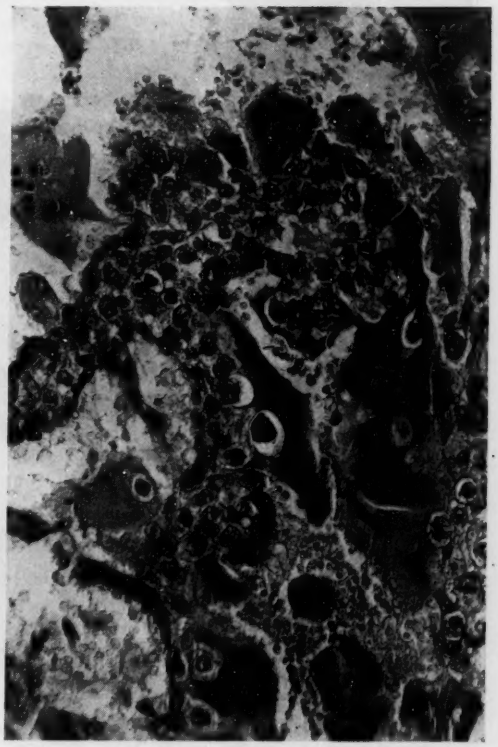

Fig. No. 4 shows the syncytial cells and the cells of Langhans

The clinical picture of different cases of chorioepithelioma varies from a most malignant course to a spontaneous and permanent retrogression. Hitschmann and Christofaleth state that there is no difference between trophablast (fetal tissue) and chorioepithelioma.

The tumor usually appears first as a nodular excrescence growing from the surface of the uterine canal or from the lumen of the tube. The growth is very vascular, often having the appearance of a hermatoma, and tends to bleeding and necrosis. The metastasis may extend to the vagina, pelvic organs, lungs, brain, liver, kidney, spleen, or bone. Many times the metastatic nodules will disappear when the mother tumor has been removed. There are often numerous corpus luteal cysts of the ovaries associated with either a hydatidiform mole or chorioepithelioma.

Microscopically the tumor is formed by proliferation of cellular elements of the chorionic villi namely the syncytium and the cells of Langhans. The syncytial cells originate from the fetal ectoderm. They are disposed in large protoplasmic masses containing numerous oval

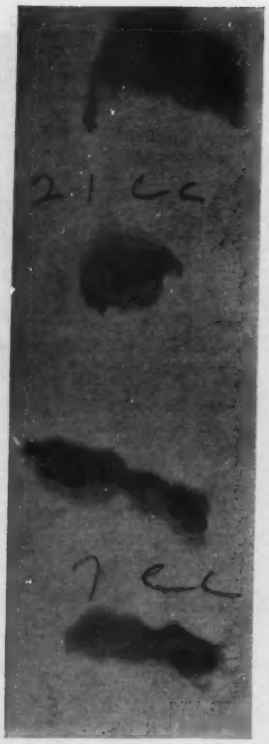

Fig. No. 1 shows ovaries in positive Ascheim Zondeck test (Friedman)

Fig. No. 2 and 3 show the chorioepithelioma and the corpus luteal cysts of the ovaries

nuclei. The nuclei are rich in chromatin and are frequently in the process of mitosis. Surrounding these cells is more or less fibrinous tissue containing in its meshes free or coagulated blood, mononuclear cells, leucocytes and cells of the Langhans type. The last named are small and well defined with a clear cytoplasm. The nucleus is small, round and poor in chromatin. Where the Langhans cells predominate there is little disposition to rapid growth and metastasis, however, when the syncytial element is greater, the growth may be exceedingly rapid and lead to an early metastasis.

A positive Ascheim Zondeck test two months after chorioepithelioma has been removed indicates the presence of metastases. A negative test rules out the possibility of chorioepithelioma. A quantitative reaction 100,000 rat units or more point to a malignant tumor, however, normal pregnancies have given equally as high test at three months pregnancy. A normal pregnancy is reported positive with ½cc of urine (Friedman test) a recurrent positive after chorioepithelioma has been removed, means a pregnancy or a metastasis.

The symptoms of a chorioepithelioma are repeated uterine hemorrhage after an abortion or a hydatidiform mole, loss of weight, positive Ascheim Zondeck test two months after a hydatidiform mole has been removed. Hertzler states that in fifty per cent of hydatidiform mole, a malignant condition develops.

The treatment of chorioepithelioma is total hysterectomy and x-ray is recommended postoperative. In unoperable cases favorable results have been reported by Keen with the insertion of radium into the uterus and the use of x-ray.

The case I have to report is a white female age thirty-two. There is no family history of tuberculosis, carcinoma or cardio-renal disease. The patient had had one normal pregnancy seven years ago. Nine weeks ago a hydatifiform mole was removed. The patient has continued to flow. Her condition has been good and she has gained weight. Two Ascheim Zondeck tests have been run, the last with one-third the normal amount of urine and is still positive.

On physician examination the heart, lungs and abdomen were normal. Urine: Spg.-1014; Albumen, negative; sugar, negative; micro-

scopic-occasional blood cells; W.B.C. 8,000; Hb-78. Inspection of the vagina shows a mild bleeding, not marked. A hysterectomy was done, the tubes, ovaries and the uterus with the exception of the tip of the cervix were removed. There were two hemorrhagic spots on the fundus of the uterus, corpus luteal cysts of the ovaries. There were no adhesions.

The patient made an uneventful recovery. X-ray was suggested but owing to the fact that the patient was feeling good and gained weight was not used. The Ascheim Zondeck test was positive eleven days postoperative and was negative twenty-two days postoperative. The patient has continued to improve and there has been no evidence of metastasis.

CONCLUSION

The Ascheim Zondeck test is an aid in the diagnosis and the prognosis of chorioepithelioma.

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THE THERAPEUTIC EFFECT OF HEAT AS APPLIED WITH THE ELLIOTT TREATMENT REGULATOR

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The application of heat to relieve pain, diminish swelling and to accelerate healing is as old as the science of medicine. In the translation of the works of Hippocrates we find the following aphorism. "Heat is suppurative, but not in all kinds of sores, but when it is, it furnishes the greatest test of their being free from danger. It softens the skin, makes it thin; removes pain, soothes rigor, convulsions and tetanus. It removes affections of the head and heaviness of it. It is particularly efficacious in fractures of bone, especially of those which have been exposed, and most especially in wounds of the head, and in mortifications and ulcers from cold; in herpes extendens of the anus, of the privy parts, the womb, the bladder, in all these cases heat is agreeable and brings matters to a crisis; but cold is prejudicial and does mischief."

Since that time we find the application of heat in various and diverse manners for numerous and sundry diseases and symptoms. Heat has been used superficially in the form of moist and dry heat, and in the past twenty years systemic reactions have been produced with a subsequent rise in temperature by the use of non-specific protein therapy, i.e., intravenous typhoid bacilli and Plasmodium Malaria and more recently by diathermy.

Local application of heat has been effected by the use of electric heating pads, hot water bags, hot packs, baths, douches, and recently the Elliott treatment.

Before discussing the modus operandus of heat applied to the body, perhaps it would be well to diverge briefly and refresh our memory on the pathological process of inflammation, which may be divided into vascular and tissue changes. The etiological factor of inflammation may be bacterial; mechanical, such as blows or sprains; thermal, burns and frost-bites; chemical, acid or alkalis; or physical, i.e., electrical in nature.

The first factor in the vascular change is a condition of hyperemia as manifested by a rapid and lasting dilatation of the vessels, accompained by an increase in the rapidity of the blood flow; this increased rapidity of flow lasts for a short while, then the current gradually becomes slower and slower; next, the corpuscles which normally occupy the center of the blood stream begin to drift to the vessel wall.

The second factor in the vascular change, exudation, becomes evident at a very early stage. The leucocytes pass through the vessel walls, especially those of the small veins and capillaries, by ameboid movement into the perivascular tissues where they may die or find their way back into the circulation through the lymphatics; they may exert phagocytic action or become pus cells. The red cells pass through the walls of the capillaries by a process of diapedesis where, once external to the vessel wall, they are broken up and their coloring matter diffused through the tissue, whence, as a rule, it is completely absorbed. The plasma is exuded

through the cell wall into the perivascular tissue. The second phenomenon in inflammation is the tissue changes. The reaction of the tissues in acute bacterial inflammation appears to be dependent entirely on the irritative power of the toxins. If these be potent, death of the tissue results, and necrosis occurs; and if the invading organisms are pyogenic in character, the necrotic mass becomes infiltrated with leucocytes and suppuration follows. When the inflammatory mass is non-bacterial in character, there is frequently much effusion of fluid, and at first but little cellular exudation, whilst the process is distinctly limited and has no tendency to spread; therefore, the most common termination is resolution.

The local clinical signs and symptoms of inflammation and their causes are as follows: Heat, due to the increased amount of blood flowing through the inflamed part. Redness, due to a hyperemic condition of the inflamed part. Swelling arises from hyperemia, and exudation and pain results from the mechanical irritation of the peripheral nerve endings, both by the increased arterial tension and by the pressure of the exudate.

As this paper is devoted to the Elliott treatment we must answer this question: How does the application of topical heat alleviate the signs and symptoms of inflammation resultant from certain pathological conditions?

We think this is brought about by the following mechanism: First, the actual penetration of the heat through the tissues with its action on the causative organism and its soothing effect on the nerve endings. It is an accepted fact that the most valuable agency for the destruction of bacteria is heat. Vegetative organisms being killed in a moist condition at 55 degrees to 60 degrees C. in ten to fifteen minutes. The Gonococcus is dead after exposure to a heat of 50 degrees C. for ten minutes, while at room temperature it may remain alive for two to three days. B. Coli will not withstand 55 degrees C. for one-half hour. Streptococci being killed by 65 degrees C. in two hours and 70 degrees C. one hour. The statement that topical heat does penetrate into the tissues can be substantiated by the experiments of Macleod and Taylor, who report experiments with rabbits using thermocöples buried in the flesh. They report that the heat applied to the abdomen about 25 degrees F. more than the skin surface causes temperature changes to be recorded three inches below. We have found in our cases that there is a distinct rise in body temperature as evidenced by the taking of temperatures per os before and after a sixty minute treatment. A rise in temperature of 1 degree to 1.3 degrees is the usual result.

In the female taking vaginal treatments, the rectal temperature has been taken immediately prior to, during and after a sixty minute treatment, and we have determined a distinct rise in temperature of 1 degree to 3 degrees F.

Secondly, we believe, inasmuch as heat is one of the etiological factors in the production of inflammation, that the inflammatory reaction is augmented at the original site by penetration of the heat through the tissue, and also an inflammatory area is produced at the site of the application of the heat. Each of the elements in the inflammatory reaction is of benefit to the patient in combating a colony of bacteria. The acceleration of the blood flow serves in the first place to dilute and remove the toxin; furthermore, the increased supply of blood must serve to keep the nutrition of the tissues at its highest level so that if possible they may be preserved alive in spite of the action of the toxin. If the blood contains antibodies, these will be brought in large amounts to the region where they are required. The retardation of the blood enables the white cells to migrate to the infected area and utilize their phagocytic power. The local application of heat proves an excellent means of securing arterial dilatation and acceleration of the circulation superfically; lpmph circulation is materially increased superficially and deeply; therefore, this augmented lymph circulation has for its direct effect the washing out of the tissues, an accelerated resorption, a more thorough cell nutrition and a reduction of the infiltration.

The Elliott treatment furnishes a means of introducing and maintaining in the vagina, urethra (male) and other body cavities, constant dry heat at any desired temperature and pressure, distributing its hyperemic effects directly and evenly to the entire cavity and adjacent structures.

The treatment permits, without necrosis, the comfortable use of temperature heretofore unknown, namely 130 degrees F.

The treatment is administered by introducing into the particular cavity a specially developed antatomically shaped applicator, made of pure latex rubber, so constructed that it is

evenly distensible. When distended with circulating water, it entirely fills the cavity, is self retaining and radiates dry heat evenly and directly to all surfaces.

The treatment regulator automatically heats and circulates water through the internal distensible applicator at the temperature and pressure which the physician wishes to use. Such temperature and pressure are accurately maintained for any desired period.

In using the treatment the physician knows beyond all question the exact temperature and location of the radiating area, and thus has complete and definite knowledge of the amount of dry heat applied to the surface or structures while he is treating.

Treatment routine in female.

	Temp. at Start	Max. Temp.	Length of Treatment
First treatment	115°	125°-126°	30-40 min.
Second treatment	115°	127°-128°	45 min.
Third treatment	115°-118°	130°	60 min.
Remainder of treatment	118°-120°	130°	60 min.

Average pressure 1½ pounds.

Number of treatments necessary for various pelvic conditions.

1. G. C. Twenty-six treatments.
2. Amenorrhea. Twenty-six treatments.
3. Salpingitis. Sixteen to thirty treatments.
4. Dysmenorrhea. Three series of seven to ten each.

PROSTATIC TREATMENTS

Bladder and rectum must be emptied before giving treatment.

Treatment routine.

	Temp. at start	Max. Temp.	Length of treatment
First treatment	115°	125°	30-40 min.
Second treatment	115°	127°	45 min.
Third treatment	116°-118°	128°	60 min.
Remainder of treatment	118°-120°	130°	60 min.

Average pressure 2 pounds.

CASE HISTORIES

Case No. I. Mrs. R. M. Age twenty-four. White, female, married. One child four years old. Since the birth of her child she has had trouble with her menstruation and has had a heavy vaginal discharge. For the past year she has been extremely nervous and irritable with abdominal distress at night. Menstrual periods have been irregular with marked dysmenorrhea and pain and tenderness in the right lower quadrant of abdomen three to four days prior to beginning of menstruation. Patient has always had marked discomfort during intercourse.

Bimanual examination revealed uterus normal in size and position. There was marked tenderness over right adnexa, but no definite mass could be outlined. Vaginal examination showed a heavy white discharge negative for gonococci.

Patient was given twenty Elliott treatments on consecutive days.

Three months after series of treatments was completed the patient was feeling fine. Abdominal distress was gone. Menstrual periods were regular, dysmenorrhea and pain over right adnexa had vanished. There was no discomfort during intercourse, and nervousness had disappeared.

Case No. II. Mrs. A. S. Age thirty-six. White, female, married, has three children, twelve years, six years and eight months old. Four years ago patient had an acute attack of what was diagnosed pyo-salpingitis. She states she was in a hospital for two weeks in a distant city. She had severe pain in her lower abdomen with high fever, and her abdomen was packed with ice for several days. A laparotomy was recommended, but she refused to submit to the operation. Finally she submitted to a drainage of the abscess through the vagina. Patient felt fairly well until the birth of youngest child, but since that time she has been practically an invalid due to severe pain and tenderness in right lower quadrant of abdomen. At times she has fever and has been confined to bed for several days at a time, necessitating opiates for relief of pain. Patient had been in bed for three days with a temperature of 100 degrees when we first saw her. Bimanual examination revealed uterus in normal position but enlarged and boggy. A distinct mass extremely tender to palpation was outlined in right adnexa. There was a slight vaginal discharge negative for gonococci.

The patient was given a series of thirty-two treatments on consecutive days. At the beginning of the series the patient was brought to our office in an ambulance, but at the end of ten treatments she was improved enough to walk in for the remainder of the treatments. An interesting phenomenon appeared in this case. The patient had been nursing her baby, and after four treatments she brought the baby with her to the office literally covered with large bullous urticaral lesions which disappeared

in a few days when the baby was placed on a formula feeding.

After finishing the series of treatments the patient felt perfectly well and was seen eight months later still feeling fine. The mass was still present although much smaller and no tenderness was elicited upon pressure.

Case No. III. A. H. Male. Age thirty-one. Married, with a history of acute gonorrhea on three occasions, the last time being two years ago in 1933. Each time the patient had acute prostatitis and was hospitalized.

We were called to see this patient and found him in bed apparently very ill. He had had a chill and was complaining of being hot, pain and discomfort in perineum, severe pain and swelling in left epididymus and inability to void. Physical examination revealed temperature 103. Marked left epididymites, digital examination of prostate outlined a large boggy prostate extremely sensitive to palpation. There was a slight urethral discharge containing many gram negative intracellular diplococci. This patient was hospitalized, catheterized, scrotum suspended and covered with ice packs, and ten cc. calcium lacto glutonate was given intravenously daily for four doses. The patient was given two rectal Elliott treatments daily for six days. Following the first treatment he was able to void, and after four treatments his temperature was normal and the perineal discomfort had disappeared. This patient is still receiving treatment for his gonorrheal infection.

Case No. IV. Mrs. I. C. Age nineteen. Housewife. Entered Mount Carmel Hospital per ambulance on June 4, 1935, with temperature 105 degrees. Pulse 136, R. 36. Six days previous to admission she had an obstetrical delivery, and on the fourth day following the delivery she had a severe chill with following increase in temperature. Patient had several chills before admission to hospital. Laboratory check-up upon admission showed albumin 4 + and 4 + pus cells in urine. R.B.C. 3,550,000. Hgb. 70 per cent (Sahli). W.B.C. 15,800 with 88 per cent polymorphonuclears and 12 per cent lymphocytes. Patient was given a 500 cc. blood transfusion immediately. On morning of June 5 patient had a temperature of 107 degrees and she was delirious in afternoon. Ten cc. of metaphan was given intravenously on June 5, and repeated on June 6 and 7.

On June 6 Elliott treatments were started vaginally, and one was given daily until patient was discharged from hospital on June 23. Patient had two chills on June 6, one on the seventh, one on the eighth, and none after that date. Her temperature fluctuated after beginning the treatment from 104 degrees to 99 degrees in evening preceding discharge from hospital. Patient improved very rapidly clinically and was feeling very well until June 13, when she developed a marked phlebitis of the femoral vein in left leg, which we feel was responsible for the continued fever. Upon discharge from hospital, phlebitis was improving rapidly and patient felt very well.

In presenting this representative group of our series of cases we do not wish to appear over enthusiastic and claim that the Elliott treatment will supersede surgery, medical and endocrine therapy, but we do feel justified in stating, with the results we have obtained in our cases, that in our opinion this treatment has a definite place in modern medical treatment in conjunction with surgical and medical adjutants. We also feel confident that many cases can be definitely benefited by the Elliott treatment, while heretofore it has been deemed necessary to resort to surgery; and if we can accomplish this in a goodly number of cases, we realize what a great benefit it is to the patient, economically as well as in the danger encountered with any major operation. Secondly, it is felt that this treatment may be utilized advantageously as a preoperative and postoperative measure to insure better and quicker surgical results.

THE EFFECTS OF AMIDOPYRINE AND PHENOBARBITAL ON THE BLOOD CELL COUNT OF WHITE RATS

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Since the publication of Madison and Squier considerable interest has been shown in the action of amidopyrine and the barbituric acid derivatives as a cause of primary granulocytopenia (agranulocytic angina.) They produced a similar condition in one rabbit out of a series of seventeen animals.

Many articles have appeared including case studies and the results of experimental work.

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In 1935, Kracke and Parker, reviewing the literature, emphasize the importance of amidorpyrine in the etiology of this disease. Hoffman, Butt and Hickey reported the production of an initial leucocytosis, followed in a few weeks by a depression of the total white count. They used only amidopyrine and administered the drug to rabbits. Herz states that the reduction of leucocytes is caused by the NH (imido radicle) derived from phenylhydrazine, and that this reduction resembles the effect of phenylhydrazine on the blood stream and on the bone marrow.

Our investigation was undertaken to determine the effect of the administration of amidopyrine, amidopyrine and phenobarbital, and phenobarbital. White rats were used because of the important differences between the blood picture of man and this animal. The normal differential count[3] of adult rats is: Lymphocytes eighty per cent, polymorphonuclear neutrophiles 18.5 per cent, and polymorphonuclear eosinophiles one to three per cent. The percentage distribution of leucocytes resembles that of agranulocytic angina but there is not a leucopenia.

PROCEDURE

Four series of rats were used with the following medication:

Series I: Four rats, amidopyrine.

Series II: Four rats, amidopyrine and phenobarbital.

Series III: Two rats, phenobarbital.

Series IV: Two rats, control group.

Method of Administration: Normal saline solution of amidopyrine and phenobarbital were given by subcutaneous injections.

Dosage: In the calculation of the dosage the fact was taken into consideration that the metabolism of rats is ten to fourteen times that of man. Amidopyrine 0.05 gm. for each kilogram and phenobarbital 0.15 gm. for each kilogram of body weight were given. Daily injections were made during a period of thirty-eight days. Fresh solutions of the drugs were made each week, 05.5 gm. of amidopyrine in 50 cc. of normal salt solution, and 1.0 gm. of phenobarbital in fifty cc. of normal salt solution. The amounts of amidopyrine used, based on body weight, are ten to fifteen times the average oral dose for man. Phenobarbital was given in doses of approximately one hundred times the average oral dose for man.

Blood Study: Leucocyte, erythrocyte and differential counts were made every six days on each rat. The blood for the determinations was obtained by section of the end of the tail.

RESULTS

Series I: Amidopyrine.

All of the rats in this series showed an increase in the leucocyte count. A gradual increase from 8,100 to 14,000 leucocytes for each cu. mm. of blood developed in one rat in a period of two weeks. The remaining three rats showed an increase of 2,000 to 3,000 in the total leucocyte count. The counts returned to normal at the end of twenty-eight days. No changes were noted in the erythrocyte count or in the differential count other than the appearance of a few normoblasts on the thirteenth to the thirty-fifth day.

Series II: Amidopyrine and Phenobarbital.

All of the rats in this series showed an increase in the leucocyte count. In one animal the count increased from 6,800 to 18,200 leucocytes for each cu. mm. of blood and the erythrocyte count was reduced from 8,400,000 to 5,260,000 for each cu. mm. of blood. Both of the counts returned to normal at the end of thirty days, and continued unchanged.

In the remaining animals a similar increase appeared in the leucocyte count which ranged from 4,000 to 6,000 for each cu. mm. of blood. There was an average decrease in erythrocytes of 1,000,000 for each cu. mm. The counts returned to normal within twenty-eight to thirty days.

The appearance of a few normoblasts on the thirtieth to the thirty-fifth day, in the differential count, was again observed.

Series III: Phenobarbital.

No changes were produced in the leucocyte, erythrocyte or differential count.

Series IV: Control Group.

No changes in the blood pictures of these rats were observed.

DISCUSSION

Subcutaneous injections of amidopyrine and of phenobarbital were given to white rats. Amidopyrine, and amidopyrine with phenobarbital produced an increase in the leucocyte count. Phenobarbital produced no demonstrable effect upon the blood picture. The leucocyte count in all of the rats returned to normal by the twenty-eighth to thirtieth day.

One rat in the amidopyrine and phenobarbital series developed a rather high leucocyte

(Continued on page 526)

PRESIDENT'S PAGE

MEDICAL DEFENSE

To the Members of the Kansas Medical Society:

The Medical Defense Board of the Kansas Medical Society had its inception in 1911, during the presidency of Dr. O. P. Davis. The late Dr. W. E. McVey was the first Chairman of the Board, serving in that capacity until he was elected editor of the Journal in 1914. Dr. Davis succeeded him as Chairman of the Board, and he has served continuously since that time —over twenty-one years.

The Medical Defense Board is composed of three members of the Council, one member being elected each year for a term of three years. The Board elects its own chairman. It is the duty of the Board to investigate all claims of malpractice made against the members of the Kansas Medical Society and, if found to be proper cases for defense, prosecute such cases to the end, and pay all costs of the defense. It also has the power to employ the counsel for the defense. The Board has always selected eminent attorneys, and at present it is represented by the Hon. J. D. M. Hamilton, one of the outstanding members of the legal fraternity.

The 1935 report of the treasurer of the Kansas Medical Society showed a balance of $12,393.18 in the Defense Fund, and many of the members considered this an unnecessarily large reserve. So in view of the fact that the previous House of Delegates had raised the annual dues from $7.00 to $10.00 because of the new administrative program, Dr. Davis proposed a plan which would lighten the burden on the members, and accordingly offered an amendment to the constitution whereby the $2.00 annual assessment for defense would be suspended, and all costs for defense be drawn from this reserve until the fund is reduced to $5,000.00. The expenditures during these twenty years have averaged $1,525.41 yearly. Estimating on that basis it will require about four years to reduce the fund to the minimum. During that time no assessment will be required. No doubt this consideration is highly appreciated by the members throughout the state.

The Medical Defense is one of the most important activities of the Kansas Medical Society, and should be recognized as such for the benefits it yields in time of need. No physician, no matter what his standing may be, is exempt from a malpractice suit. The usual lawyers who accept these cases have no respect for persons, and their chief concern is whether the doctor's financial standing is such as to make the suit worth while.

And very often it is the case with which the doctor has worked hardest, and received little, if anything in payment, that results in a malpractice suit. And strange to say, many malpractice suits are brought about by adverse criticism from a fellow practitioner. Sometimes it is thoughtlessness, and other times jealousy and spite occasion the remarks.

It is unfair to criticize the method or skill of another physician with only the end result from which to judge, with no knowledge of the beginning, or the course of the injury or disease. Why do we let jealousy and spite enter into our relations with our confreres, when kindness and consideration are more to be desired?

The Bureau of Legal Medicine reports twenty-six state associations that are assiting their members against malpractice suits. These associations are commended by the Board of Trustees of the American Medical Association, and it urges all associations to organize in this defense service for their members.

This is my last "President's Page" as my term of office expires on December 31st. I have served The Kansas Medical Society for nearly nineteen years, first as Secretary for seventeen years, and the remainder of the time, one year and eight months, as President-elect and President. I feel that I have been highly honored by The Kansas Medical Society, and I appreciate and thank it for this trust reposed in me. I hope I have merited this confidence.

I want to congratulate the Society on its choice of my successor, Dr. H. L. Snyder. I myself have the highest regard for him as a friend and for his ability to carry on the work of the Society in its service to the profession and to the state. Let us all pledge him our loyalty and support.

To each and every member of The Kansas Medical Society, I extend my heartiest wishes for a very joyous Christmas and a happy and prosperous New Year.

And may The Kansas Medical Society move onward and ever onward.

J. F. Hassig, M.D.

EDITORIAL

DR. J. F. HASSIG—PRESIDENT

The presidency of a state medical society has always represented one of the highest honors medicine can confer, but the advent of new problems and new difficulties in recent years has added a tremendous responsibility to this honor. Today, the man who accepts the office takes upon his shoulders the guidance of medicine through a crisis, and the extent and wisdom of his leadership are destined not only to affect the present medical generation but also those to follow.

A glance at this year's record will show that Kansas medicine acted wisely when in May 1934 it chose Dr. J. F. Hassig for this responsibility. In all probability no president of the Kansas Medical Society has faced a more precarious year, and in all probability no president has better served the organization.

His eighteen years of experience in medical organization, his excellent cooperation and suggestions were of great aid to the Executive Secretary Committee and the Executive Secretary in establishing and organizing the operations of a central office before his term of office began. His term coincides with the first full year of operation of the full time executive secretary plan which has provided the executive with a strong coordinating and motivating aid not available to former encumbents.

Early in this administration, the Council decided that the Society needed a committee to consider and assist in the handling of the difficult economic problems that confront the profession. Dr. Hassig's wise appointments to the organizations first Medical Economics Committee and the splendid work its members have accomplished are well known to all Kansas physicians.

Since Kansas had not been offered federal aid for provision of medical care to relief workers, many physicians were bearing a difficult burden in caring for these cases without compensation. The various studies instituted on this subject, the many conferences held with Washington and local relief authorities, and the subsequent development of a plan designed to provide adequate indigent medical care in accordance with medical ethics and wtihout governmental financing are additional accomplishments of this administration with the efficient cooperation of the Medical Economics Committee and the Executive Secretary office.

His long activity in the famed Brinkley case was culminated during this year by a decision in the federal courts which upheld the ideals of organized medicine for public welfare.

The 1935 session of the legislature also presented several matters of medical importance. The Society was asked to assist in the passage of a state basic science law, and although the campaign was not victorious it was successful to the extent that the act came closer to passage than ever before. Of other medical bills introduced, none opposed were passed and only a few of those endorsed were defeated.

Kansas was able to offer WPA employees a free choice of legally licensed doctors of medicine for treatment of traumatic injuries suffered in the course of work project employment, while physicians were allowed equitable and standardized fees for services rendered in that connection.

The Social Security Act was assigned as a Society study shortly after its passage by Congress, and through excellent cooperation afforded by Dr. Earle G. Brown, Kansas will doubtless have an efficient program in that regard.

Dr. Hassig's interest in Kansas' greatest health program—the practice of medicine and surgery by unqualified cults—has gone far toward bringing about definite action to improve this situation.

It became known that schools throughout the country would this year engage in debates on the subject of socialized medicine. Again, through efficient leadership, we met the chal-

lenge of certain propagandists who had hoped to catch medicine napping.

Those who care to investigate will find that the next American Medical Association meeting was brought to Kansas City, Missouri, largely through the efforts of Dr. Hassig. He thought that this easily accessible meeting-place for the greatest of all medical conventions would be of assistance to mid-western medicine.

Much more of the record can be recalled for which space does not permit an adequate description: A Committee on Maternal Welfare was instituted during this year; the Committee on Public Health and Education outlined news releases and speakers bureau projects which will soon be operating; the Cancer Committee continued its excellent work and has planned a cancer post-graduate course to be offered in strategic geographical centers of the state; through Society recommendation local medical economics committees have been appointed in many county medical societies and official representatives are soon to be selected in non-organized counties; present membership stands at 1450 which is a high mark for recent years; the successful 1935 state meeting displayed the second highest registration in the history of the Society; groundwork was laid for securing the appointment of a doctor of medicine as a member of the Kansas Board of Regents, and resolutions were exchanged with the dental profession toward a closer union of the two professions.

The membership might be interested in knowing that Dr. Hassig has this year traveled 12,225 miles, spent forty full days and twenty-nine part days, and attended forty-two out-of-town medical meetings in the interest of the Society.

It seems evident that Kansas medicine has made great progress this year, and that its members may well be proud of its retiring president and his record.

THE RIGHT TO DIE

In recent issues of the daily newspapers, widely splattered across the front pages, there have appeared many titles bearing upon the subject of painless eradication of incurables. This publicity was brought about by the bit of information arising from a campaign in England to establish "the right of persons suffering from an incurable disease to die," following the report that an English physician had admitted that he was responsible for or had taken the life of five individuals on different occasions.

This opens up quite a large field for discussion and all in all throws a very great load upon the medical profession. There is no doubt about the fact that ever so often every physician is confronted with the fact that he has an incurable with which to deal, a patient that reserves the greatest of sympathy and the best of care. And it is not infrequent in every physician's life to have the feeling that one of his patients would be better off were the patient to leave this world. But where is he to draw the line?

First of all before one can go very deeply into this subject, we must first define or designate just what we mean by "incurable." And also there must be a certain amount of consideration of medical history to furnish the background for our decision. In the history, handed down from mouth to mouth of the Indian tribes, so the legend goes, at the time of childbirth the march was stopped along the wayside long enough for the Indian mother to give birth to her child and expell the placenta. Should the placenta not be expelled in a reasonable period of time the mother was left by the wayside to die of hemorrhage or infection because they were wise enough to know that manual removal meant death. To the Indians that mother was incurable. Is that our modern interpretation of the condition of retained placenta?

In the past century pulmonary tuberculosis meant almost certain death. Do we have that

same conception now? Prior to the boldness of the pioneer abdominal surgeon, Dr. Murphy, acute appendicitis was almost invariably fatal. Is it now? Most all of us have seen the hopeless, helpless, doddering, incontinent paretic undergo the modern fever therapy, whether it be mechanical or by innoculation, and return to society a fairly useful citizen. Within the medical experience of most of us the hopeless picture of the diabetic has been turned into one that is much happier in its scope.

In the very recent months we hear reports of temporarily arrested cases of dementia praecox, a heretofore incurable disease. We are also hearing of relief of prostatic urinary retention without resorting to surgery, thereby reducing the mortality of prostatic disease. The dreaded hypertention of old with its inevitable end of cerebral hemorrhage is beginning to clear a little around the horizon and some of the haze is clearing away, with increasing concepts of glandular origin of functional disease.

The ideal of modern physicians and surgeons is, primarily to prevent disease, to cure those that have become afflicted, to search for and eke out the etiology of incurable disease, and to find a cure for such. The basis for this ideal is the prolongation of healthful and useful life. We must not get the idea that we are Gods chosen few to determine who shall live, or how long they shall live. Promotion of life is our aim and towards that end we should strive. And in the light of such, a definition of "incurable" would be an admission of ignorance concerning some disease, that sooner or later scientific and medical workers will solve.

"THE DOCTOR AND THE PUBLIC"

"The Doctor And The Public," by Doctor James P. Warbasse, published recently by Paul Hoeber, is according to the author's preface, "an inquiry into the physician's place in society and the possibilities of the medical method in solving social problems." The thesis is that medicine possesses, for the public and for the physician, depths of value not yet sounded and resources of service still untouched. The aim of the book—"to bridge the space between medical science and public interest"—may well express the aim and ideal of medical practice.

The book is inhanced in interest and in value as a document by a review of medical history in which is shown the relation of medicine to the civilizations of antiquity, the conflicts with theology and mysticism, and the obstructions of superstition, ignorance and wars. The names and their places in history of the great men who are the heritage of modern medical science are told that the reader may see in the long perspective of time the science of medicine in its growth and finally coming of age in the present century. It is the development to maturity of power of medical science as a social force that particularly interests the author. His viewpoint is that of a physician zealous for the economic welfare of his fellows in the practice of medicine, with the social consciousness of the needs of the masses for a more adequate medical service which he deems a fundamental necessity.

The opposition of the medical profession to sick insurance which is neither under the control of physicians or patients should not, in the author's opinion, be carried to honest attempts toward the application of the insurance principle when exercised in the interest of both physician and patient. He believes that the medical profession cannot afford to close its eyes to the fact that some form of socialization of medicine is coming and he urges that the profession seek to guide the trend.

The principle involved in the group cooperative associations appears to Dr. Warbasse as particularly attractive as a solution of the problem of distributing medical service. He would organize physicians into groups, with all required specialties represented. Such groups would cooperate with consumers' co-

operative associations made up of the people of the communities in which the medical groups are to practice. This plan, he suggests, can be worked out in every community and be made of the widest application. He believes that high grade medical talent would be available and that adequate financial remuneration could be paid to the employed physicians. He does not give his approval to state socialism. He believes that whatever plan is adopted, it should be non-political in control. Medical practice should not be operated as a business. The profit motive he considers entirely out of place in the plans for the future of the practice of medicine.

Criticism of the government's attitude toward public health is well directed in calling attention to the profound importance given to every interest having to do with property and profits. Dr. Warbasse writes: "Money has a guardian angel but there is no great department of government for conserving human life. There is no secretary in the cabinet of the President whose duty it is to be concerned for the lives of the masses of the people. A government by business in the interest of business has little concern as to the health of the masses. The United States Public Health service is a highly efficient but small department of government under the Secretary of the Treasury who is usually a banker or a financier. . . . The interest that the government takes in the health of the people is assayed in the scales of finance."

Dr. Warbasse makes a pertinent suggestion that might well be taken by scientists, that a central international bureau of scientific coordination be established for the purpose of bringing about the conjunction of minds of those engaged in scientific study and research. He deplores the existence of international barriers which prevent not only the flow of commerce but inhibit the exchange of ideas. "If Darwin could have walked and talked with Mendel in the garden of the monastery of Brün this would have been a conversation more important to humanity than any of the widely heralded conversations of international diplomats with which the world is familiar."

The book is not radical. Dr. Warbasse is a liberal, a "Progressive" physician whose writing is evidence of his faith in medical science and its ability to solve social problems, and who would see the medical profession assume intelligent leadership.

LABORATORY

Edited by J. L. Lattimore, M.D.

TRAINING OF LABORATORY TECHNICIANS

PHILIP HILLKOWITZ, M.D.*

Denver, Colorado

Laboratory methods in the diagnosis and treatment of disease are now a vital part of the practice of medicine. Not only in the hospital but in the physician's visit to the home, he enlists the aid of these scientific and precise procedures, carried out with the test tube and the microscope. The results of laboratory findings are fraught with great responsibility, affecting the life of a patient, frequently involving a resort to a serious operation. A familiar example is the blood count in a suspected case of appendicitis which may have the deciding influence.

With the enormous increase of laboratory work in recent years, which manifestly could not be carried out personally by the clinical pathologist who specializes in this branch of medical practice or by the physician who has not the time nor the skill involved, there has sprung up a new vocation, that of clinical laboratory technician who assumes a function similar to that of the nurse in her particular relation to the doctor. Just as the latter must have a proper course of training for carrying out her duties, so a laboratory technician must undergo an adequate period of preparation and study to perform her task.

The rapid growth of laboratory practice and the demand for workers brought forth in

*Chairman Board of Registry of the American Society of Clinical Pathologists

former years a crop of ill prepared, poorly educated and temperamentally unfit personnel. This deplorable state of affairs was fostered still further by unscrupulous commercial schools who by the promise of lucrative positions lured unsuspecting aspirants to take short and inadequate instruction for extortionate fees.

In order to put an end to this chaotic condition, the American Society of Clinical Pathologists, an organized body of specialists in this branch of medicine, undertook thru its Registry of Technicians, not only to insure the qualification of workers in this field by issuance of certificates but to set down standards for their proper training under skilled tutorship. Following are the minimum essentials for approved schools:

(1) The Director must be a graduate in medicine and a clinical pathologist (or pathologist) of recognized standing. He shall be responsible for the actual conduct of the training courses. He shall spend not less than one-half of each day in the actual direction of the laboratory.

(2) The technical assistants who comprise the active teaching staff shall be those who specialize in various branches of laboratory science or registered technicians, capable of teaching, demonstrating and guiding the work of the individual student.

(3) The yearly enrollment shall not exceed more than one student to each member of the teaching staff (the regularly constituted college course is excepted.)

(4) The hospital shall have a bed capacity of not less than one hundred patients and an average daily occupancy of seventy-five or more.

(5) The minimum educational prerequisites shall be (a) high school graduation, and (b) credits of one year work including chemistry and biology from a recognized college or university (this is to be raised to two years' college work in 1938.)

(6) The minimum length of the course for training shall be not less than twelve months, consisting of a rotating or departmentalized service with the minimum of three hundred laboratory hours and sufficient didactic hours in each two month period of service.

(7) The instruction shall include (a) didatic period, (b) text assignment, (c) quiz hour, (d) periodic written examination, (e) practical demonstration, (f) practice period and performance of tests under supervision, (g) final review and examination.

(8) There shall be adequate equipment and space as well as sufficient number and variety of specimens to meet the added requirements of demonstration and practice.

(9) The hospital laboratories approved for the training of technicians shall not allow any "students," volunteer workers or so-called "technician interns" to serve in the laboratory as substitutes for paid workers, in return for obtaining training and experience in laboratory technic.

(10) Exorbitant fees should not be charged.

(11) Commercial advertising is considered unethical.

The Council on Medical Education and Hospitals of the American Medical Association has rendered valuable assistance to the Registry by having its hospital inspectors make periodic inspections of schools for training technicians. Only such schools are approved as are passed by the Council and the Registry.

The high attributes required of a Technician —intellectual honesty, scientific ability and pleasant personality—make it imperative that discrimination be exercised in the selection of students. It is the aim of the Registry to eventually entrust the teaching to colleges of learning. Quite a number are now providing courses leading to the degree of Bachelor of Science in Medical Technology, the first three years covering a curriculum similar to that of a premedical course and the last twelve months are pursued in hospital and private laboratories under the direct supervision of a recognized clinical pathologist.

Until this goal is reached and a sufficient number of universities assume this role, the apprenticeship system of training under proper guidance will be acceptable, provided that all the conditions of preliminary education, length and adequacy of course are complied with.

This endeavor for the maintenance of high standards has received the cordial endorsement of the leading medical and hospital organizations who have actively cooperated with the Registry in its program of furthering scientific accuracy in the healing of the sick.

—JKMS—

Science cannot save lives or cure disease until it is applied.—Anon.

—JKMS—

The first qualification for a physician is hopefulness. —James Little.

TUBERCULOSIS ABSTRACTS

RESULTS OF SURGICAL TREATMENT

Surgical treatment of pulmonary tuberculosis includes all forms of mechanical collapse with the exception of that produced by pneumothorax therapy. It comprises extrapleural thoracoplasty, paralysis of the diaphragm, section of the scaleni muscles, pneumolysis with or without plombage, drainage of tuberculous cavities with secondary plastics and various combinations of these methods including that with pneumothorax. Other forms of surgical treatment still in the experimental stage are not considered in this study.

In trying to evaluate results of surgical treatment for pulmonary tuberculosis a diversity of variable factors may vitiate the significance of comparative statistics; for example, none of the various surgical procedures can be said to be standardized with respect to their technical aspects, the indications for the different procedures vary greatly and the time element is important. Nevertheless the statistics compiled as in any other field of clinical medicine, furnish a perspective and means of plotting the course of future trends.

The study is based on the author's experience with a series of 200 thoracoplasty cases, and on 4,535 from the literature. Statistical tables in the article support the author's summary, which is as follows:

THORACOPLASTY

From one-quarter to nearly one-half the deaths following thoracoplasty within a period of five to ten years occur within the first eight weeks. The author's mortality in this period was 10.3 per cent; the combined mortality among 2,810 cases was 10.5 per cent. The individual variations among the series were from three to twenty per cent. The most frequent cause of death in the author's experience was cardiac failure and pulmonary complications. In a combined group of 230 deaths, death was reported to have been due to shock in eight per cent, heart failure in eighteen per cent, and pulmonary complications or extension of tuberculosis in thirty-four per cent. The mortality rate decreases progressively after the first few weeks. From one-half to two-thirds die during the first six months.

Among 3,762 patients followed for from one to twelve years after operation, 35.3 per cent were symptom- and bacillus-free and were able to work; 22.1 per cent were improved and able to do some work; 5.5 per cent were not improved or were made worse by the operation; 3.5 per cent were not traced; and 33.6 per cent were dead at the time of the report. A large proportion of the patients are rehabilitated to the extent that they are able to return to their former stations in life and to resume their former occupation or activities. Many women marry, and there is record of twenty-two who have borne children since their operation, usually against advice.

The variation in extent of partial thoracoplasty and relatively limited number of any one type followed for one or more years make any estimate of enduring results from them inconclusive. Among 236 collected cases followed for two years or more, 87.5 per cent were living, and 12.5 per cent were dead. Of the living, 53.4 per cent were reported as clinically well; of the deaths one-half occurred during the first eight weeks after operation.

PNEUMOLYSIS AND PLOMBAGE

Of 307 cases observed during several months to several years, 53.4 per cent were clinically well, 18.5 per cent were improved and 44.3 per cent were dead. Of the deaths, forty per cent occurred during the first eight weeks after operation.

PHRENICOEXAIRESIS AS AN INDEPENDENT PROCEDURE

This operation is performed for such a variety of indications and the chance of later recurrence of the disease following so limited a collapse is so considerable that prolonged observation of the patients in any one group will be necessary for a determination of late results. The results so far reported are conflicting, but a considerable number of enduring clinical cures are recorded.

A combination of methods has extended indications to include cases with bilateral lesions and has improved results.

CONCLUSIONS

The surgical treatment of pulmonary tuberculosis offers to properly selected patients not suitable for pneumothorax therapy the best if not the only prospect of a complete arrest of the disease and, when that cannot be achieved, a relief of symptoms and prolongation of life.

The proper selection of the patients and of methods and of the most opportune time for operation demands the closest collaboration of the phthisiotherapist and surgeon.

From one-quarter to one-half of the total deaths during the first ten years following thoracoplasty occur during the first eight weeks and death is due largely to shock, cardiac failure, and pulmonary complications, all in considerable measure preventable through preoperative preparation, through operation graded into stages according to the patient's condition, and watchful prolonged postoperative supervision. Such measures will extend indications for operation. Even though by so doing the total mortality is not reduced, more patients otherwise hopeless are given the chances it affords.

Deaths after the first eight weeks are due largely to extension of the tuberculosis, in some measure preventable through primary adequate collapse, through secondary additional collapse or compression for recurrence, and through reasonable care of the health.

Adequate application of the method or combination of methods indicated, early in the disease before extensive destructive changes in the lung and before secondary visceral damage has occurred, will result in a minimal mortality, a maximal conservation of respiratory function, and in the greatest possible measure of rehabilitation.

The Results of Surgical Treatment of Pulmonary Tuberculosis, Carl A. Hedblom, Am. Rev. of Tuberc., July, 1935.

MEDICAL LITERATURE

Edited by Will C. Menninger, M.D.

DISEASES OF THE LIVER

In this rather short article, Lyon discusses the differential diagnosis of only three groups of cases, the toxemias, the cirrhoses, and acute yellow atrophy. He stresses the need for recognition of the early signs and symptoms of functional liver disease as these functional disturbances precede the development of structural changes.

In advanced liver disease, the history and physical examination, coupled with good clinical experience, may often alone suggest the broad major diagnosis, but in early stages and even in later stages, there is often a merging or overlapping of changes in hepato-cellular structure or hepatic damage which makes the laboratory duodenal tube studies, and roentgen-ray observations of valuable assistance in clarifying the details.

The clinical picture of the terminal stage of cirrhosis is easily identified, but it is important to recognize the early signs and symptoms so that the terminal decompensated stage with ascites may be prevented or become less frequent. The early symptoms of potential cirrhosis of the liver are similar to those of the hepatic-intestinal toxemias. In these there may be an antecedent history of simple catarrhal jaundice, typhoid fever, constipation, or perhaps of the use of arsenicals, the quinolines, excess iron or copper, or a preceding chloroform anesthesia. In the early stages the patient complains of undue fatigability—he is unrefreshed after eight hours sleep—mild to severe cramps in toe, foot arch or leg muscles, diurnal drowsiness, loss of alertness and ability to concentrate, momentary dizziness, dancing scotomata, sallow color, and frequently acne vulgaris. The sclerae are icteric, the stools slightly deficient in bile, the urobilinogen index is high, indican may be in excess; liver spots or cloasmata may appear; telangiectases above the costal margins are important signs to note; the differential value of the Van den Bergh test are often helpful; the icterus index may show latent if not actual jaundice; there may be an increase in uric acid, a diminution of urea, or possibly an increase of blood cholesterol; and bromsulphalein retention and evidence of diminished liver secretion and excretion of bile are of diagnostic value. Patients manifesting the above clinical features have been designated by Lyon as hepatic toxemias, intestinal toxemias, and hepatic-intestinal toxemias. Such symptoms are often the prelude to cirrhosis itself which is classified as ordinary or common cirrhosis and biliary cirrhosis. In the first of these, hematemesis is an early symptom; ascites a terminal incident. Jaundice is not prominent and the liver may be either large or small but is multilobularly involved. The spleen is enlarged at times but not so constantly as in group two. In biliary cirrhosis, jaundice is prominent and long continued and hematemesis and ascites are both less common. The liver is enlarged and the surface is smooth and unilobular. The spleen is also enlarged. This group has been subdivided by Rolleston into (a) simple hypertrophic biliary cirrhosis and (b) obstructive biliary cirrhosis.

Acute yellow atrophy or acute necrosis is characterized by decreasing size of the liver, by jaundice, fever, and certain nervous symptoms. The first stage is one of indefinite malaise, early mild digestive symptoms, or jaundice. The appearance of nervous symptoms and a turn for the worse mark the onset of the second stage. Features of this stage are headache, photophobia, dullness, restlessness, delirium, muscular twitchings and convulsions, and the presence of the Babinski sign. In the third stage, vomiting is more troublesome and frequently bloody, the pupils dilate, the pulse is rapid and thready respirations increase, the temperature may be subnormal or rise to high fever, petechrae and submucous hemorrhages frequently occur, drowsiness becomes progressive, and the patient lapses into comas and usually dies.

Treatment consists of warmth to the liver region, blood transfusions, intravenous sugar, carbohydrate fluids by mouth, salt and sugar by bowel and subcutaneously, duodenal drainage, and general supportive measures. Bile salt preparations by mouth or vein are dangerous until after jaundice has subsided.

Lyon, B. B. Vincent: Differential Diagnosis of Diseases of the Liver, Annals of Internal Medicine 9:258-263, September 1935.

DIGITALIS AND HEART DISEASE

Willius discusses the use of digitalis as a treatment for cardiac disorders. Ever since its introduction in 1776 as a treatment for dropsy, digitalis has been the most used and misused drug in the treatment of heart disease. When properly administered, it has proved to be the most valuable of all present day drugs, but the tendency exists to administer it on the mere mention of heart disease and in heart disease regardless of the type of lesion or state of function.

The practical facts concerning its known effects on the heart of man are (1) in therapeutic doses digitalis has been known to increase the amplitude of ventricular contraction by its direct action on the cardiac muscle; (2) slowing of the heart occurs under certain conditions, particularly in auricular fibrillation and conspicuously when the ventricular rate is rapid; (3) this slowing occurs from stimulation of the vagus center in the medulla, from stimulation of the cardiac vagal endings, and from direct repressent action on the auriculoventricular conducting system. Other specu-

lative or secondary effects are diminution in cardiac output, increase in myocardiac tonicity, lessening of dilatation, and diuretic effect. The full effect of the drug rarely becomes evident before forty-eight hours.

It is extremely important to select a preparation of digitalis that is properly and accurately standardized. It is necessary to use a preparation that does not deteriorate rapidly and one that is known to be less than a year old. Forms suitable for use are the tincture, the powdered leaf in capsules, and the tablet of known potency, although if the tincture is used, it is necessary to abandon the time-worn and inaccurate drop method for an accurately marked inexpensive metric graduate.

The individual oral dose varies in different cases. The average dose of the tincture is 1.5 cc. three times daily or 0.1 gm. (grains 1½) of the powdered leaf or tablet three times daily. Administration is continued until full therapeutic effect is obtained unless toxic phenomena occur. If this occurs, the drug may be discontinued for four or five days and resumed for two or three consecutive days. If quick action is desired, larger doses may be given by mouth or injected intramuscularly in dose of 6 to 8 cc. or 0.4 to 0.5 gm.

Contraindications to the use of digitalis are anorexia, nausea, vomiting, diarrhea, coupled beats, the development of partial or complete heart block, dimness of vision, inability to focus the eyes, difficulty in the identification of objects, presence of scotoma and diplopia, yellow and green vision, prodromal symptoms, restlessness, increased nervous irritability, periods of disorientation regarding time and place, and occasionally stupor and paroxysms of tachycardia.

Willius, F. A. Cardiac Clinics XIII. Talk on Digitalis, Proceedings of the Staff Meetings of the Mayo Clinic 10:577, September 11, 1935.

URTICARIA DUE TO SENSITIVITY TO COLD

A good review of the literature, presented by Levine, regarding urticaria due to sensitivity to cold reveals that there are three hypotheses for the etiology of urticaria following exposure to cold. The immunologic hypothesis as upheld by Prausnitz and Kustner and others is based on the method of passive transfer. Blood is removed from a view of the arm of a patient at the height of the local and systemic reaction caused by the cold, and the serum is separated and injected intracutaneously into a normal

nonallergic person. The slight swelling from the injection is allowed to subside, cold is applied, and a wheal appears. Serum from a normal person treated similarly causes no wheal. Harris, Lewis, and Vaughn, demonstrating the humoral hypothesis, were able to show that with a tournquet applied so as to cut off the venous return from the hand or the arterial supply to the hand before it was immersed in the cold water and kept on for an additional period after removal from the water a local response was produced but a systemic reaction did not occur. When the tournquet was released the systemic reaction took place. The neurovascular hypothesis, advanced by Duke, concludes that the general reaction has much to do with the actual sensation of cold and is due to an imbalance of the mechanism for regulation of heat.

The case reported by Levine is that of a housewife, thirty-six years old, who was subject to swelling of various parts of the body whenever they came in contact with a cold object. Cold food made her throat and tongue tingle and swell. At first the swelling was accompanied by weakness and generalized aches and pains, but shortly before her admission to the hospital, the systemic reaction became less frequent. Examination showed that urticaria followed the application of ice or water at from naught to twenty C. Attempts to produce wheals in a normal person by means of serum extracted from the woman were unsuccessful. Washings obtained from a large whealed area by repeatedly injecting and withdrawing sterile physiologic solution of sodium chloride with a one cc. hypodermic syringe caused a wheal in a neighboring cutaneous area while a control injection of the sodium chloride failed to do so. Other experiments showed that the formation of a wheal was not induced by the local application of menthol, which gives the sensation of cold, or inhibited by anesthesia with procaine hydrochloride.

Treatment consisted of repeated exposure to cold by means of cold showers and rubbing the body with cakes of ice. Since the patient had already improved slightly at the time of her admission to the hospital it is impossible to know whether the further improvement was spontaneous or the result of treatment. The etiology has not been determined.

Levine, Harold: Urticaria Due to Sensitivity to Cold, Archives of Internal Medicine 56:498, September 1935.

GUMMA OF THE HEART

Sohval enumerates the authentic cases of cardiac gumma recorded in the literature and adds two new cases.

The first case was that of an Italian man, fifty-three years old, whose symptoms of weakness, cough, anorexia, pressing sensation in the left lower part of the chest radiating to the left upper part while walking, dyspnea on exertion and swelling of the ankles were of three months' duration. Wassermann and Kahn reactions were positive; a roentgenogram of the chest revealed a marked enlargement of the heart to the right and left and a prominence the size of a large plum; and an electrocardiogram showed the rhythm to be very irregular. The patient died within nineteen days and the autopsy revealed gummatous cardiac aneurysms which explained the signs of valvular stenosis, the pulmonary prominence, and the serologic findings indicative of syphilis. It also disclosed a rare consequence of cardiac gumma, i. e., caseation, cavitation, and communication with the ventricular cavity.

The second case was that of a forty year old negro who entered the hospital complaining of dyspnea, orthopnea, palpitations and swelling of the feet and abdomen for five months. He had had polyarthritis fifteen years before and three years later he contracted a purulent urethral discharge and a sore on the penis. The patient died within two days of admission. The autopsy revealed gumma of the myocardium. This case represents the type of cardiac gumma in which it is an accidental finding at necropsy and has been unproductive of clinical manifestations. In neither of these cases was the diagnosis made clinically; however, when atypical cardiac findings are observed in a patient with conditions known or expected to be syphilis, tertiary cardiac syphilis (gumma) should be considered. Other manifestations indicative of gumma are heart block, usually situated weird stenotic murmurs, and unexplained roentgen shadows at the borders of the heart.

Sohval, Arthur R.: Gumma of the Heart, Archives of Pathology 20:429-444, September 1935.

FIBROSIS AND EMPHYSEMA

Chronic pulmonary conditions are considered by Miller primarily from the functional point of view, for in this way, the pathological

physiology of such conditions can be more clearly understood. The lung has an intrinsic functional capacity for adaptation to the many demands made upon it. A functional emphysema may take place which is entirely reversible in its structural manifestations. Later on, emphysema which was at first compensatory and reversible may become permanent and irreversible, but really only rarely. By far the greatest amount of emphysema takes place in the presence of mild inflammatory processes which lead to fibrosis. Clinically the first changes discernible may be entirely limited to the bronchial tree. These symptoms which are usually attributed to bronchitis may be present for a very long period of time before the second stage becomes noticeable. In this phase, increasing signs of respiratory embarrasement take place. Finally, because of the interrelationship between respiration and circulation, further respiratory decompensation leads to respiro-circulatory failure. Sometimes this is known as right-heart failure. The author emphasizes that evidence is being advanced that the lungs have capacity for functional and structural adaptation to a far greater degree than has been so far thought possible.

Miller, James A.: Pulmonary Fibrosis and Emphysema, Annals of Internal Medicine 9:219, September 1935.

CEREBRAL HEMORRHAGE AND CEREBRAL THROMBOSIS

This is an excellent study of 245 cases in an attempt to find criteria for differential diagnosis. These vascular lesions are more common in men than in women. Hemorrhage occurs much more frequently in the decade from forty to fifty than thrombosis. Both of these accidents are much more frequent in winter than in summer. Neither time of the day nor activity are etiologic factors. Emotional strain is not as important as some authors and laymen believe. Premonitory symptoms are far more common with hemorrhage. Headache, vomiting, convulsions, and unconsciousness occur more frequently in hemorrhage. One of the most important differential points is the type of onset, immediate unconsciousness being far more common in hemorrhage. Abnormalities in depth, rate, rhythm, and sound respirations are more frequent in hemorrhage. Elevated blood pressure, evidence of arteriosclerosis, abnormalties in the eyes (anisicoria, conjugate deviation, loss of pupillary reflex), stiffness of the neck, bilateral Babinski sign, leukocytosis, are all much more common in hemorrhage than in thrombosis. Increased spinal fluid pressure and grossly bloody spinal fluid are usually present in hemorrhage and rare or absent in thrombosis. The survival period is much shorter in cases of hemorrhage than those of cerebral thrombosis.

Aring, C. D. & Merrit, H. H.: Differential Diagnosis between Cerebral Hemorrhage and Cerebral Thrombosis, Archives of Internal Medicine 56:435-456, September 1935.

SIZE OF THE HEART IN NORMAL CHILDREN

Josephi has made a series of 418 observations on the value of height, weight, age, body surface area and the usual measurements of the heart in normal children. The measurements of the heart and those of the body have been correlated and the highest degree of correlation has been shown to be between the body surface area and the cardiac surface area. Other correlation coefficients in order of their degree of relationship are: (1) cardiac surface area to weight; (2) cardiac surface area to height; (3) cardiac surface area to age; (4) cardiac transverse diameter to weight; (5) cardiac transverse diameter to body surface area; (6) cardiac transverse diameter to chest dimaeter; and (7) cardiac transverse diameter to height. The quotient with the statistical means of 11.5 and 15.5 has been derived as the relationship of the body surface area to the cardiac surface area and has been found to be a good measure of the series. Five tables show the statistics of Josephie's work.

Josephi, Marion G: Measurements of the Size of the Heart in Normal Children, American Journal of Diseases of Children 50:929-944, October 1935.

COLLATERAL CIRCULATION TO THE HEART

Beck and Tichy report on work that has been carried on at the Lakeside Hospital for the last six years. After preparing the pericardial bed for collateral circulation by irritative methods the coronary vessels were clamped off. The collateral blood supply thus established was sufficient to take care of the heart's needs. This work has been done on dogs. The first human application was given considerable newspaper publicity after a successful transplantation of the pectoral muscle to the pericardium in a man with coronary disease.

Beck, Claude S. and Tichy, V. L.: The Production of a Collateral Circulation to the Heart, The American Heart Journal 10:849-873, October 1935.

MEDICAL ECONOMICS

Edited by O. W. Davidson, M.D.
of the Medical Economics Committee

Three letters have come to the attention of this department during the past month which we think so well portray medical economic subjects as to be worthy of publication for the information of all members.

The first is a letter written by Dr. Earle G. Brown, Secretary of the Kansas State Board of Health, in reply to an inquiry received from a high school debater. A copy of Dr. Brown's letter was received by the central office, and its able summary of problems incidental to socialized medicine caused us to secure permission to print both the inquiry and reply.

Dr. Earle G. Brown,
Topeka, Kansas,
Dear Sir:

In connection with a survey which we are making, we should like to ask the following questions:

1. Is medical service in your state satisfactory?
2. Do you believe that a system of complete medical service, available to all citizens at public expense, would better medical conditions in your state?
3. What steps, if any, do you believe would most improve medical service in your state?
4. Do you believe that the people in your state can afford to purchase complete and adequate medical service through taxation?
5. Do you know of any source from which information about the present expenditures of the inhabitants of your state for medical service can be obtained?

An early reply to the above questions will be greatly appreciated. Please address reply to the address given below.

Sincerely yours,

.....

Topeka, Kansas.

Mr.....

Topeka, Kansas,
Dear Sir:

I have your letter wherein you have asked for certain information regarding medical services in the State of Kansas.

The Kansas State Board of Health, as I presume you know, has no authority in either rendering medical service or governing the practice of physicians. Practitioners of medicine are licensed by the Board of Medical Registration and Examination, which Board is charged with the enforcement of the Medical Practice Act. Our department has authority in matters relating only to public health. The Board, however, does furnish to physicians, materials for immunization and vaccination against certain diseases.

Before attempting to answer your questions, may I suggest that the agitation for socialized medicine is largely the result of the depression, and that lay individuals are the leaders in the movement. Prior to 1930, little or no comment was heard regarding inadequacy of medical services rendered to any class of persons regardless of their social standing. However, even in those years, there were many families who were dependent upon the county or state for support, including medical care. Their number was very small in comparison with such persons today. Many of these individuals received medical service which was furnished by the city, county or state. Undoubtedly, greater numbers received such service from private physicians, and which was given by those physicians as a community service.

May I ask your indulgence while I offer some personal experiences. Upon graduation from Northwestern University Medical School, I served a year's interneship in Mercy Hospital, Chicago, returned to Topeka and opened an office for the practice of medicine in 1914. My practice was terminated in September 1917 when I entered the Medical Department of the United States Army. Only a few days ago, I was reviewing some of the accounts for services rendered while I was in private practice. On a number of accounts was the notation that the patients were unable to pay; others were noted as "uncollectable," many for the reason that these individuals evaded payment for medical service just as they evaded payment of other bills they had contracted. Every physician in practice, I am quite sure, has had the same experience, but conditions have been more acute in recent years.

The answers to your questions will be based on personal observations, and on discussions of the question with doctors of medicine in various sections of the state.

1. It is our opinion that medical service rendered among certain classes is not satisfactory. This is largely the result of economic conditions in the past five years. Greater numbers of men and women are unemployed, with the result that they have little or no income. Thus they are not able to pay for medical services. This is also true as regards clothing, food and other necessities of life. During the depression, the incomes of physicians have also been curtailed. Consequently, physicians are in recent years doing a greater volume of work for which they receive no pay.

Under authority of the state laws, Boards of Commissioners of the various counties are required to provide medical care for indigent persons. This authority is contained in Sections 39-323 and 39-326, R. S., 1923, as follows:

"Relief of persons sick or in distress. It shall be the duty of the overseers of the poor, on complaint made to them that any person not an inhabitant of their township or city is lying sick therein, or in distress without friends or money, so that he or she is likely to suffer, to examine into the case of such person, and grant such temporary relief as the nature of the same may require; and if any person shall die within any township or city who shall not leave money or other means necessary to defray his or her funeral expenses, it shall be the duty

of the overseer of the poor of such township or city to employ some person to provide for and superintend the burial of such deceased person, and the necessary and reasonable expenses thereof shall be paid by and upon the order of such overseer; and the board of county commissioners of the proper county at any meeting of such board shall examine all claims arising under the provisions of this section, and if found reasonable shall direct the same to be audited and paid out of the county treasury." 39-323.

"Physician for asylum. It shall be the duty of the county commissioners to appoint annually a well-qualified physician to attend the county asylum and allow him a reasonable compensation for his services." 39-326.

We realize many persons who are on relief are unable to pay even a small fee for medical service, and such services are theoretically provided by the various counties. Those who are on work relief could pay at least partial fees for medical services if they were willing to do so. It is our opinion that many individuals who could pay, are using the depression as a reason to avoid payment for many legitimate purchases, including medical services.

2. It is my opinion that a system of complete medical service available to all citizens at public expense would not better medical conditions in Kansas. It is only necessary to refer to the records of certain foreign countries which have systems of so-called state medicine to confirm this statement.

Medicine is a science and if a physician is to render satisfactory service he must undergo a long course of study. The entering medical student must be a high school grdauate and have not less than two years of premedical instruction. Certain medical schools require that their students shall be graduates of a recognized college or university with a degree in arts or sciences. The medical course requires four years and in addition an internship of one and one-half to two years before the graduate is qualified to enter practice. We are not attempting to set up in this statement the amount of money which may be involved in a physician's education, but it may be seen that a minimum of nineteen to twenty years of school, including the interneship is necessary before the graduate is qualified to practice. Therefore, a physician is entitled to a reasonable return on his investment, which is his education.

I believe if you will refer to the records of certain foreign countries having socialized medicine that you will realize that such a system is inadequate. Every physician participating may have assigned to him a very large number of patients. It is impossible for any physician to see a large number of patients in one day and give them a careful examination, which is necessary for satisfactory medical service. If it is necessary for the patient to go to the physician's office to receive such care, then the patient, if he is any distance, will delay seeking medical service until an emergency arises.

Under the plan of "socialized" medical care, the family physician-patient relationship is lost. The patient has no choice of physicians, and conversely the physician cannot limit his practice. It is our opinion that physicians in Kansas and other states of the Union have rendered more efficient medical care than in any other country in the world and the reason for this is that the patient has had the privilege of selecting his own medical advisor.

3. As referred to previously, the board of county commissioners acting through its poor commissioner, has the authority to provide medical service to those who cannot pay for such services.

A plan of cooperation has recently been developed through the Economics Committee of The Kansas Medical Society which will provide medical attention to work relief and direct relief families. Under this plan those persons who are on work relief will have the opportunity of securing medical service by the payment of a monthly fee per family, which amount will be regularly paid whether or not such services are utilized. The plan is, however, during the period of the emergency, and the emergency will be established by The Kansas Medical Society.

This plan will permit the free choice of physicians, with the consequent maintenance of the patient-physician relationship. Under this plan, the physician could not make any profit, yet, the volume of service would tend to make possible near-cost price for his services.

4. No. If socialized medicine is made compulsory by state law, the quality of medical service will be inferior to the service that is given under the present system. If socialized medicine should be required by law, we believe that the medical students entering college would not be as well qualified as they are at the present time. Undoubtedly, there would be an increase in the number who would study medicine, with the idea of having an income rather than rendering a high type of medical service. There would be no incentive for research or investigation.

5. I do not know of any source where expenditures could be secured for medical service. I am presuming that you are familiar with the report on the cost of medical care which was issued some years ago, but does not adequately present conditions as they are at the present time. The records for medical care for the various counties in the state should be available through the offices of the county clerks in the respective counties. This would apply, however, only to the medical services rendered to the indigent.

For all classes, we cannot understand why there should be a demand for socialized medicine, with the physician providing his services at cost. There has been no demand that banks loan money without interest; that clothing, food, hardware or other merchandise be provided without profit, or newspapers and magazines accept advertising for merely the cost of printing.

If socialized medicine is to become a reality, would it not be just as reasonable for the legislature to enact a law prohibiting banks from making interest charges (other than actual cost of handling) on loans; that clothing, food, hardware and other merchandise be sold at actual cost, and that newspapers or magazines could only make a charge to

the advertiser for the actual amount of money expended for the printing of an advertisement?

The Kansas Medical Society has prepared a statement on "socialized" medicine. If you do not have a copy, it may be secured by addressing your request to C. G. Munns, Executive Secretary, Stormont Building, Topeka, Kansas.

Very respectfully,
Earle G. Brown, M.D.

The second letter is from a member who was kind enough to write the central office about several experiences he has had in connection with the current inter-scholastic debates on socialized medicine.

Dear Sir:

"Just a note to tell you my experience with the debate situation up to date. In the letters sent out to each high school here in addition to inviting the debate teams to confer with the debate committee appointed, I added also the invitation that they call upon their family doctor or any other doctor of their choice that belonged to the county medical society if they should find it more convenient to do so.

I have been very much gratified with the results, for I find that several of the doctors that have taken little interest in the county medical society before have been called upon and have been stimulated perhaps more by the contacts on this question than by any other means; in fact, one such doctor told me this morning that he had answered a number of questions for these high school students that came to his office, and after talking with some of the affirmative debaters, they were of the opinion that they wanted to go back to the school and get switched over to the negative side of the question.

I received a call last evening from our high school, stating that they were practicing their debate that evening and invited me to attend.

I was convinced of a number of things while I listened to this debate. First, that the debate judges will decide wholly upon the manner in which the subject is handled and not upon the subject material. Second, that the arguments presented by the negative side, with all due allowance for my biased opinion, will impress the audience more logically than the material given by the affirmative side; in fact, I felt rather proud of the Medical Society, and I think that the public will feel much the same way when they listen to the debates. Third, I wish that every member of the Medical Society could hear the debates, for I think that it is the best mirror that any of us could go before to see just how we have impressed the laity.

For instance, the affirmative argues the point that money spent for patent medicines and quack doctors would be almost enough to defray the expenses if the people had the privilege of going to good doctors and a well organized system of socialized medicine. Then in the rebuttal the negative side points out the millions of dollars spent for cigarettes, cosmetics, candies, etc., and the various harmful arguments against the statement that people cannot afford to pay doctors. They point out that there is no basis for people spending so much money for such things that they cannot afford to pay the physician. In argument against the patent medicines they make the most pertinent criticism of the medical profession in a perfectly legitimate way by stating that the patent medicines that have the largest sales are the best patent medicines. This is substantiated by that fact that many of these medicines are prescribed and recommended by the family doctor; then they name a list of advertised therapeutic agents. Certainly there can be no denial on the part of the physicians that our prescribing pharmaceutical agents with which the public are familiar has brought about such a severe criticism against our profession.

I had the privilege of answering questions for about forty-five minutes to this group. I went there armed with a lot of pamphlets and statistics, I found no occasion to use any of the material. The questions were very sensible, very elementary, and could have been answered by any member of the profession.

I think that perhaps one of the most beneficial moves that the Medical Economics Committee could make would be to get word to all of the high school debate teams to invite doctors to sit in on these trial debates. I am sending out another letter to each school, as a result of my experience, to invite the doctors of their choice to meet with them. The earlier that we can get them started on this the better we will be able to convince those debaters of the real truth of the situation. I sincerely feel that the experience of this one doctor I mentioned will strengthen the negative side and weaken materially the affirmative by presenting nothing more than the truth of the situation."

The last is by Dr. P. T. Bohan, Kansas City, Missouri, which letter seemed to us to offer an interesting illustration of state medicine in general, and particularly in Porto Rico.

Dear Sir:

I first want to apologize for the delay in answering your letter of the 12th. One reason for not making an immediate reply was that I wanted to contact Dr. C. C. Dennie, so that he could correct me if I had misunderstood any of the conversation that took place between outselves and a young doctor in Porto Rico—a graduate of Kansas University, a few years ago.

However, the remarks I made at the banquet were in reference to medicine, as practiced in Porto Rico. Neither Dr. Dennie nor myself, due largely to the language (Portuguese) were able to find out much about medical economics in Brazil. Information that we obtained, however, showed that they have both government support of the hospitals and private practitioners, and the men doing private work seem to be quite well satisfied. The standard of living in Brazil, as you no doubt know, is very low. A policeman gets $14.00 a month and common labor is paid twenty to thirty cents a day. In spite of this, the average fee charge for an office call by a private practitioner is thirty to forty milreis, which is equal to $1.80 and $2.40.

My comments at the banquet were pertaining to the conversation which took place between Dr.

Dennie and the young K. U. graduate, of a few years ago. This young man was getting $2500.00 a year and he said that was all he ever expected to make. For the past year he has devoted all his time to examination of stools. He said, not once but repeatedly, that if he went to a private home to get the stool of a sick child, regardless of the condition of the child he was not allowed to prescribe for it. This was left to another man, whose duties consisted of prescribing medicine for children with diarrhea.

Our young friend, also, stated that ninety per cent of the medical work done on the Island is done by either the stated employed doctors or by men doing public health work, and that most of the ten per cent private work is referred through political pull by government officials.

The thing that impressed me very much was that in spite of this attempted specialization and the enormous cost to the state of their government physicians and public health service, the death rate from tuberculosis is increasing at a tremendous rate —last year, 500 per 100,000 population, something more than ten times the rate in the state of Kansas.

This certainly cannot be attributed to the climate which is something like Florida the year round, nor does the explanation that it is due to lack of vitamins and proper food satisfy me, since they have as good food as they ever had.

Dr. Dennie asked the young man how he liked his work and he said that he was very much dissatisfied, that he hoped soon to come to the States and locate in San Antonio, and that he would be quite happy if he thought he could make $75.00 a month in private practice.

Sincerely yours,

P. T. Bohan, M.D.

The Effects of Amidopyrine and Phenobarbital on the Blood Cell Count of White Rats

SLOAN J. WILSON, M.S.

(Continued prom page 511)

count, as much as three times the normal level. A slight reduction in the erythrocyte count was observed in the same series, which later returned to normal. A few normoblasts were found in series I and II (amidopyrine, and amidopyrine and phenobarbital) on the thirtieth to the thirty-fifth days. No other changes were present in the differential counts.

No changes occurred in the blood pictures of the series in which phenobarbital was used alone.

The appearance of the normoblasts after intensive medication seems to indicate that the bone marrow was affected in some manner. It is possible that adequate dosage of amidopyrine, with or without phenobarbital, over a sufficient period of time, may produce leucopenia and granulocytopenia following initial leucocytosis.

The subcutaneous, daily injections of the drugs produced no apparent inflammatory reaction. All of the injections were made in the subcutaneous tissue of the back.

CONCLUSIONS

1. Amidopyrine produced an elevation in the leucocyte count in rats, which returned to normal within twenty-eight to thirty days.

2. Amidopyrine and phenobarbital when given together produced a leucocytosis which returned to normal. A slight reduction was noted in the erythrocyte count.

3. Normoblasts were found after repeated injections of amidopyrine, and in combination with phenobarbital. This is presumptive evidence that the bone marrow was being stimulated to some degree.

4. Phenobarbital when administered alone produced no change in the blood picture.

5. The repeated daily subcutaneous injections of amidopyrine and of phenobarbital produced no local reaction.

(The author wishes to thank Dr. Hazel E. Branch, University of Wichita, and Dr. R. M. Isenberger, University of Kansas School of Medicine, for their helpful assistance and advice.)

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—JKMS—

A. C. Ivy, Chicago (Journal A. M. A., Aug. 17, 1935), points out that the administration of adequate amounts of raw pancreas or active pancreatic extracts orally in the presence of a deficiency of the external pancreatic secretion has a firm theoretical basis. The value of raw pancreas given orally to depancreatized dogs is established, the chief value of the therapy apparently being to prevent fatty degeneration of the liver. There is some evidence indicating that administration of raw pancreas and pancreatin to animals and patients having a definite deficiency of pancreatic secretion decreases the loss of fat and nitrogen in the feces. Such therapy has been used in sprue and other conditions, but its value in these has not been definitely established.

THE TIN CONTAINER

● The simple facts about many things encountered in everyday life are sometimes not understood and, frequently, their values are not fully appreciated by persons thrown in daily contact with them. Among such things, we can include the so-called "tin cans" and the foods which they may contain.

For example, many may have wondered—but, certainly, few have inquired—as to the origin of the popular designation for tin containers. The name "tin cans" arose from an abbreviation of the term "tin cannisters" applied to them during the latter part of the last century by English manufacturers. Such a name is hardly correct, since "tin cans" are made from mild steel which has been rolled into thin sheets and coated with pure tin. Actually, the can is about ninety-eight percent iron.

Again, interest has sometimes been expressed in regard to the nature and purpose of the enamels found in cans in which certain products are packed. These enamels are essentially lacquers developed by years of intensive research; they are baked on the tin surface at high temperatures. Their chief purpose is to preserve natural flavor and color characteristics of some foods. While desirable in certain instances, enameled cans are not necessary to insure a wholesome canned product.

The facts about the foods contained in cans are equally simple. Canned foods are merely selected foods which, after preparatory operations, are hermetically sealed in tin containers from which most of the air has been excluded. The preservation of the foods is then effected by a heat treatment.

The nutritional values of commercially canned foods have been established by more than a decade of biochemical research. Reference to recent articles (1), (2), together with those publications listed in their bibliographies, will permit the reader to determine for himself how favorably commercially canned foods have stood the test of actual scientific scrutiny.

AMERICAN CAN COMPANY

230 Park Avenue, New York City

(1) 1934. Ind. Eng. Chem. 26, 753
(2) 1932. Ind. Eng. Chem. 24, 860

This is the seventh in a series of monthly articles, which will summarize, for your convenience, the conclusions about canned foods which authorities in nutritional research have reached. We want to make this series valuable to you, and so we ask your help. Will you tell us on a post card addressed to the American Can Company, New York, N. Y., what phases of canned foods knowledge are of greatest interest to you? Your suggestions will determine the subject matter of future articles.

The Seal of Acceptance denotes that the statements in this advertisement are acceptable to the Committee on Foods of the American Medical Associatio...

NEWS NOTES

INDIGENT CARE

Information was received several weeks ago that all forms of direct relief financed by federal funds would definitely end on December 1. This not only meant that states who have received federal assistance for providing medical care to relief clients under FERA rule No. 7 would no longer receive that aid, but also that there is little possibility for future assistance.

Although the ruling will not have a substantial effect in Kansas,inasmuch as this state has been one of five which has received no federal funds for that purpose, the recent plan announced by the Medical Economics Committee was designed to meet a situation of this kind wherein direct relief clients will be provided for by counties of their residence and work relief clients will furnish their own necessities from works project salaries they receive.

A considerable number of counties in the state have instituted the above plan during the past month. To date no county commissioners are known to have refused its provisions and no great difficulties have been experienced in inducing work relief clients to participate.

Osborne County, which was selected by the Committee as a place of experiment before the plan was offered to all county medical societies, has had three months experience. In the first month eighteen work relief families paid their own monthly assessment and became members of the plan; in the second month approximately 150 work relief families paid their own way; and in the month closed, the number was increased to 200 work relief families and 107 rural homestead rehabilitation clients. In addition the county has paid considerable amounts for inclusion of direct and work relief clients who were unable to pay their own way.

DR. F. L. LOVELAND TO SPEAK

Dr. F. L. Loveland, Chairman of the Medical Economics Committee, has been invited to describe The Kansas Medical Society Plan for indigent medical care at the Northwest Regional Conference.

The meeting will be held in Chicago on February 16 and will be attended by representatives of midwestern and northwestern state medical societies.

PWA COMPENSATION

The central office recently requested that the Public Works Administration of Kansas furnish a ruling as to whether or not PWA employees would be entitled to governmental workmen's compensation for traumatic injuries in a similar manner as is to be provided for WPA employees.

An answer was made that all PWA projects are to be let to contractors and that therefore the government will have no direct responsibility in that regard. However, other rules of the PWA provide, that all contractors shall carry approved workmen's compensation insurance or other protection. It is therefore probable that physicians attending these cases will be entitled to payment through either the contractor or insurance carrier of a particular project.

NEW BROCHURE

Dr. R. G. Leland, Director of the Bureau of Medical Economics of the American Medical Association, has just completed a new brochure entitled "An Introduction to Medical Economics" which contains a complete summary of most problems applicable to the socialization of medicine.

Officials of the Society who have read the pamphlet believe that it is of such great value to be worthy of distribution to all members and are, therefore, attempting to secure a sufficient number of copies for this purpose.

RADIO DEBATE

The physicians of Hays presented an interesting advertisement in the Hays Daily News under date of November 11. The advertisement was entitled "What Do You Think About 'Free Medicine' at Taxpayers' Expense," and contained a complete description of the radio debate to be held on the following day between representatives of the American Medical Association and certain proponents of socialized medicine.

PHYSICIAN DESIRED

Information has been received that the town of Belpre desires a physician. None is located there and one is needed. The town is situated fifteen miles south of Larned and about seventy-five miles west of Hutchinson, with a population of approximately 385, and in a farming community. Further details may be secured from Mr. A. G. Hunt, secretary of the Belpre Business Booster's Club, Belpre.

DEATH NOTICES

Dr. F. E. Gaither, 54 years of age, died in Norton on November 11. He was born December 17 in Lynville, Indiana, and attended the University of Colorado School of Medicine for his medical training. He graduated from there in 1906 and at that time went to Clayton to begin his practice. He received his earlier college education from Creighton University, Omaha, Nebraska. In 1910 he moved to Lenora and practiced there until a year ago, when his health forced him to go to Nemaha, Nebraska. He was a member of the Northwest Kansas Medical Society.

Dr. Katherine S. Hughes, 73 years of age, died in Kansas City, on October 23. She graduated from the College of Physicians and Surgeons in 1896 and was licensed to practice in 1901. She was a member of the Wyandotte Medical Society.

Dr. H. F. Hyndman, 49 years of age, suffered a stroke and died in Wichita on October 31. He was stricken at a local hospital while making his calls and although treated immediately failed to rally. He had been practicing in Wichita since 1917, was a member of the board of directors of the Sedgwick County Medical Society and a former president of that organization. He graduated from the University of Kansas School of Medicine in 1910 where he specialized in internal medicine.

Dr. Charles J. Simmons, 77 years of age died in Lawrence on October 20. He was born in 1858 and

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received his medical education from the Bellvue Hospital Medical College in New York, graduating from there in 1905. He was licensed in 1901 and specialized in surgery. He was a member of the Douglas County Medical Society.

DR. DAVID STARR JUDD

All physicians deeply regret the untimely death of Dr. David Starr Judd on November 29. As a leading member of the Mayo Clinic he contributed many important advances to medicine and surgery.

MEMBERS

Dr. William Algie, Clay Center, has moved to Kansas City where he will be associated with a group of physicians.

Dr. G. A. Chickering attended the sixth annual fall conference of the Oklahoma City Clinical Society held in Oklahoma City the first week in November.

Dr. W. T. Creviston, formerly of Olsburg, has located in Manhattan.

Dr. O. W. Davidson, Kansas City, attended the Southwest Branch of the American Urological Association at Little Rock, Arkansas, November 14-16 and presented a paper entitled "Relationship of Hyperparathyroidism to Renal Calculi."

Dr. P. E. Davis, Princeton, has moved to Ottawa where he will continue his practice.

Dr. W. M. Droll, Alta Vista, attended the American Neuropsychiatric Association meeting in Topeka on October 25 and 26.

Dr. Clifton Hall, Topeka, was recently elected a member of the governing Council of the Mississippi Valley Tuberculosis Association.

Dr. Arnold Isaac, Newton, was elected to membership in the American Urological Society at its fifteenth annual convention in Little Rock, Arkansas, on November 17.

Dr. H. W. Palmer, Wichita, attended the annual meeting of the Aerial Medical Association held in San Antonio, Texas on November 1, 2 and 3.

Dr. N. P. Sherwood, University of Kansas department of bacteriology, was selected to lead a discussion of the paper on "Objectives of Medical Education" presented by Dean Lewis, Johns Hopkins University, at the Southern Medical Association meeting in St. Louis.

Dr. Frank Morehead, Neodesha, has been elected to membership in the Wilson County Medical Society.

KANSAS COMPENSATION SCHEDULE

Since sufficient copies of the Kansas Workmen's Compensation Schedule of Fees could not be secured to enable enclosure with the recent bulletin regarding WPA traumatic injuries, it is printed below for the benefit of all members who do not possess a copy:

FEE SCHEDULE

(Adopted by the Commission of Labor and Industry of the state of Kansas and effective March 20, 1929.)

MISCELLANEOUS

Minor injuries (first dressing) day at office	$2.00 to $3.00
Minor injuries (first dressing) home or hospital	4.00 to 5.00
Minor injuries (first dressing) night (9 p. m. to 6:30 a. m.)	6.00 to 7.00
Subsequent treatment at office	1.50 to 2.00
Hospital visit	2.00
House call	3.00
Administration of anesthetic by physician (minor operation)	5.00
Administration of anesthetic by physician (major operation)	10.00
Assistant to surgeon (physician) major operation	10.00
Removal foreign body eye (ordinary	2.00 to 3.00
Suturing small cuts or lacerations at office	5.00
Injection antitetanic serum (including cost of serum)	5.00
Plaster casts (including material and depending on location)	5.00 to 50.00
Wasserman examination	5.00
Blood examination	5.00
Urinalysis (chemical)	2.00
Urinalysis (microscopical and chemical)	5.00

SPECIAL OPERATIONS

Laparotomy—Minimum fee with after care	$100.00
NOTE.—On account of the vast difference in such cases, claim for services rendered should be based on special correspondence.	
Herniotomy—single (including after care)	75.00
Herniotomy—double (including after care)	100.00
Tendon suture	25.00
Reducing hernia by taxis and after care	5.00

DISLOCATIONS

Flat rate, including reduction and subsequent treatment.

In case of more than one dislocation, the fee shall be the major one plus an additional 50% of the fee prescribed for each of the others herein classified.

Shoulder	$35.00
Clavicle	$35.00 to 50.00
Elbow	35.00 to 50.00
Hip	50.00
Knee	50.00
Patella	5.00
Ankle	25.00
Finger	10.00
(With 50% additional for more than one.)	
Toe	5.00
(With 50% additional for more than one.)	
Lower jaw	10.00

FRACTURES

Flat fee, including reduction and subsequent treatment.

In a case where multiple fractures occur the fee shall be the major plus an additional 50% of the fee prescribed for each of the others as herein classified.

Humerus	$75.00
One bone of the forearm	$35.00 to 50.00
Both bones of the forearm	50.00 to 75.00
Carpal bones, one or more	15.00
Femur	100.00
Tibia	50.00
Fibula	25.00
Tibia and fibula	75.00
Patella, with operation	100.00
Patella, without operation	50.00

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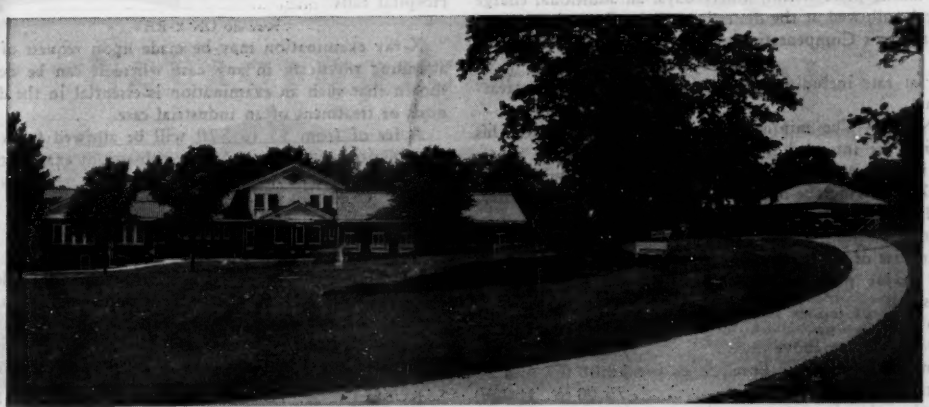

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Os calcis	30.00
Astragalus	30.00
Tarsal other than os calcis or astragalus	15.00
Rib—single or multiple	10.00
Nasal bones	10.00
Phalanx, metatarsal or metacarpal	15.00
(With 50% additional for additional fractures)	
Pelvis—a proportionate fee on the above basis will be determined according to conditions present.	
Coccyx, without operation	10.00
Coccyx, with operation	50.00
Lower jaw (not including dental work)	40.00
Upper jaw—nonoperative	15.00
Upper jaw—operative fee determined according to conditions.	
Clavicle	50.00
Scapula	$20.00 to 40.00
Skull, operative	100.00
Skull, nonoperative	25.00
Vertebrae—minimum	50.00
NOTE.—On account of vast differences in such cases, claims for additional services should be based on special correspondence.	
Compound fracture—an additional charge of 50% may be added in infected compound fractures.	
Wiring or plating—an additional charge of 50% may be added when it is necessary to perform open operation. This is not in addition to amount allowed for compound fractures.	

In unoperated complicated fractures in which union is not taking place within ninety days, an additional charge may be allowed at the discretion of the Commissioner of Workmen's Compensation.

AMPUTATIONS

Flat rate including amputation and subsequent treatments.

NOTE.—The minimum fee in the items under this section are intended to be applied in those cases where the injuries were so serious that death resulted within one week following the operation. The maximum and intermediate fees are intended to cover more extended subsequent attention.

In case of more than one amputation, the fee shall be the major plus 50% of each of the others herein classified.

Hip	$100.00 to $150.00
Leg, at knee or above	75.00 to 125.00
Foot, ankle or below knee	50.00 to 75.00
Arm, at shoulder joint	75.00 to 100.00
Hand, wrist, forearm or arm	50.00 to 75.00
One toe or finger	25.00

(With 50% additional fee for more than one.)

FEE SCHEDULE OF PHYSICIANS SPECIALIZING IN DISEASES OF THE EYE

NOTE.—These fees will be approved only to physicians of recognized standing whose practice is strictly limited to eye, ear, nose and throat work.

Foreign body of cornea and sclera:	
(a) Attached to cornea or sclera but not imbedded	$3.00
(b) Simple imbedded	3.00
(c) Difficult or complicated—including cases requiring use of magnet	$5.00 to 15.00
Cauterization of corneal ulcer (chemical)	5.00
Cauterization of corneal ulcer (thermal)	10.00
Laceration of lids or conjunctiva requiring suturing	10.00
Extraction of foreign body from inside the eyeball with or without magnet	$50.00 to 75.00
Treatment extensive burn of the cornea (initial treatment)	5.00 to 10.00
Penetrating wounds:	
(a) Not requiring surgical interference	10.00
(b) Requiring surgical interference (e. g., lacerated cornea with prolapsed iris requiring irridectomy)	50.00
Enucleation of eyeball (flat rate including after care):	
(a) Simple enucleation	$50.00
(b) Implantation operation	75.00
Plastic operation on lids	$50.00 to 100.00
Extraction of traumatic cataract (flat rate including after care)	100.00
Discission of capsule (flat rate including after care)	50.00
Operation on pterygium (flat rate including after care)	25.00
Consultation	10.00
Complete ophthalmological examination and report	10.00
Complete ophthalmological examination and report for court purposes and only upon order of the Commission	25.00
Refraction, when authorized by the Commission	$5.00 to 10.00
Office calls	2.00
Home calls	3.00
Hospital calls	2.00

RULES ON X-RAY

X-ray examination may be made upon request of the attending physician in any case where it can be clearly shown that such an examination is essential in the diagnosis or treatment of an industrial case.

A fee of from $5 to $20 will be allowed for x-ray examination and a fee of $5 for subsequent examinations if such are necessary.

NEW BOOKS RECEIVED

THE HUMAN FOOT, Its Evolution, Physiology, and Functional Disorders—by Dr. Dudley J. Morton, associate professor of anatomy, College of Physicians and Surgeons, Columbia University, New York. Published by the Columbia University Press at $3.00 per copy.

RUSSELL A. HIBBS, Pioneer in Orthopedic Surgery—by Dr. George M. Goodwin. Published by the Columbia University Press at $2.00 per copy.

TREATMENT BY DIET—By Dr. Clifford J. Barborka, department of medicine Northwestern University Medical School, Chicago. Published by J. B. Lippincott Company, Philadelphia, at $5.00 per copy.

BEHAVIOR DEVELOPMENT IN INFANTS—By Dr. Evelyn Dewey. Published by the Columbia University Press at $3.50 per copy.

THE 1935 YEARBOOK OF GENERAL MEDICINE—By Dr. George F. Dick, University of Chicago; Dr. Lawrason Brown, Trudeau Sanatorium, New York;

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Dr. George R. Minot, Harvard University; Dr. William B. Castle, Harvard University; Dr. William B. Stroud, University of Pennsylvania, School of Medicine; and Dr. B. Eusterman, University of Minnesota. Published by the Yearbook Publishers at $3.00 per copy.

MORBIDITY REPORT

New communicable disease cases in the state as compared with last month are reported by the Kansas State Board of Health as follows:

Disease	Month ending November 23	Month ending October 19
Scarlet Fever	524	233
Chickenpox	506	107
Mumps	166	119
Pneumonia	136	83
Whooping cough	124	94
Tuberculosis	111	64
Syphilis	103	85
Diphtheria	82	67
Gonorrhea	63	67
Smallpox	36	18
Typhoid Fever	31	34
Measles	24	14
Influenza	23	1
Undulant Fever	15	2
German Measles	13	6
Erysipelas	13	4
Vincent's Angina	9	5
Cancer	8	7
Poliomyelitis	7	6
Malaria	4	4
Meningitis	4	4
Encephalitis	4	2
Pink-eye	3	2
Tetanus	1	2

COUNTY SOCIETIES

The Anderson County Medical Society held a meeting in Kincaid on November 13 with Dr. B. Landis Elliott, Kansas City, Missouri, as the guest speaker. His subject was entitled "Encephalitis."

Members of the Atchison County Medical Society met for their monthly meeting on November 12 in Atchison in Dr. E. J. Bribach's office.

The Bourbon County Medical Society has adopted the plan for serving WPA workers and giving medical advice and attention to the workers and their families, which will go into effect on December 1.

The following officers were elected to serve in the Brown County Medical Society for 1936: Dr. W. G. Emery, Hiawatha, president; Dr. H. J. Deaver, Sabetha, vice-president; Dr. R. W. Wyatt, Morrill, secretary; Dr. R. T. Nichols, Hiawatha, treasurer; and Dr. E. J. Leigh, Hiawatha, censor.

Dr. E. R. Gelvin and J. M. Porter, Concordia, were the guest speakers at a meeting of the Clay County Medical Society held in Clay Center on November 13. Dr. Gelvin showed a film of a Cesarian operation and Dr. Porter spoke on "Heart Disease."

Members of the Franklin County Medical Society met on November 8 with the county commissioners to discuss phases of The Kansas Medical Society Plan. Dr. W. J. Scott was appointed as county health officer. Dr. W. L. Jacobus, Sr., Ottawa, was elected president for 1936; Dr. L. V. Dawson, Ottawa, vice-president; and Dr. G. W. Davis, Ottawa, secretary-treasurer.

Physicians of the Marion County Medical Society were hosts to members from Harvey and McPherson county societies at a dinner-meeting in Hillsboro November 8. Dr. Paul S. Stookey, Kansas City, spoke on "Immunization and the use of Anti-serum in Scarlet Fever," and Dr. Louis J. Scrapellino, Kansas City, spoke on "Staphlococcic Toxins," and illustrated his talk with slides.

Mr. R. L. Laybourn, state laboratory, Topeka, was the guest speaker at a meeting of the Montgomery County Medical Society held in Independence on November 15.

The Pottawatomie County Medical Society held their October dinner meeting in Westmoreland. Twelve doctors were present at the meeting.

A dinner meeting of the Pratt County Medical Society was held on October 27 in Pratt and Dr. A. E. Bence, Wichita, was the guest speaker. He gave a lantern slide illustrated lecture on "Fractures of the Elbow."

Dr. O. W. Davidson, and Dr. Clarence Gripkey, Kansas City, presented papers before the Saline County Medical Society at a meeting on November 20 in Salina. The topics were, respectively, "Viscero-Renal Reflexes" and "The Thyroid Patient."

Members of the Sedgwick County Medical Society held a meeting in Wichita on November 5 with Dr. C. A. Hellwig, Wichita, as the principal speaker.

Dr. L. A. Calkins, University of Kansas School of Medicine, was the guest speaker at a meeting of the Shawnee County Medical Society held on November 4 in Topeka. His subject was "The Management of Occipito-Posterior Presentation." At the November 14 meeting, Dr. Leonard G. Herrington, Kansas City, spoke on "Why We Need Mental Health." Dr. Irving S. Cutter, Northwestern University Medical School, Chicago, Illinois, spoke on "The Physician and the Public," at the December 2 meeting.

The Sumner County Medical Society held a dinner meeting in Wellington on November 21. The program was as follows: "Backache," Dr. Charles Rombold, Wichita; "Management of Cross Eyes in Children," Dr. M. E. Brownell, Wichita; "Haematuria," Dr. A. R. Hatcher, Wellington; "Venereal Disease Control," Dr. H. L. Sarchet, Wellington.

The Wilson County Medical Society held a meeting in Neodesha on November 18. Officers were elected for 1936 as follows: Dr. J. W. McGuire, Neodesha, president; Dr. H. E. Morgan, Fredonia, vice-president; and Dr. E. C. Duncan, Fredonia, secretary-treasurer.

Dr. A. A. Hayden, trustee of the American Medical Association, was the guest speaker at the meeting of the Wyandotte County Medical Society in Kansas City, on November 6. A joint dinner meeting of the society and auxiliary was held on November 19 and the program was a round-table discussion of organized medicine.

If this tired, worried, over-worked mother were using Pablum for her babies' cereal feedings, she could have slept that extra much-needed hour instead of losing her temper while her children clamor for breakfast. For she can prepare Pablum in an instant, directly in the cereal bowl, simply by adding water or milk of any temperature—salt, cream and sugar for the older child and herself.

GETTING up an hour earlier in the morning is an inconvenience for most persons, but for the mother of young babies it is a hardship, sometimes almost tragic, frequently nullifying the best-planned pediatric advice.

This is especially true in the case of the nursing mother whose supply and quality of breast milk are affected by emotional shocks resulting often in agalactia and sometimes giving rise in the baby to diarrhea, colic, and even convulsions. Furthermore, the mother's emotional stress brings about a train of behavior on her part which is reflected in the child's psychologic reactions so that a vicious circle of bad habit formation is set up.

From this angle, the recent introduction of the pre-cooked form of Mead's Cereal, known as Pablum, assumes new importance in the doctor's psychological handling of both mother and child, quite aside from its nutritional value.*

Because Pablum can be prepared in a minute, the mother can sleep the extra hour she would otherwise be compelled to spend in a hot kitchen cooking cereal. Added rest means better poise, so that petty annoyances do not bring jaded nerves. Prompt feedings prevent many childhood tantrums, and a satisfied baby usually eats better and enjoys better digestion and growth.

*Like Mead's Cereal, Pablum represents a great advance among cereals in that it is richer in a wider variety of minerals (chiefly calcium, phosphorus, iron, and copper), contains vitamins A, B, E, and G, is base-forming and is non-irritating. Added to these special features, it is adequate in protein, fat, carbohydrates, and calories. Pablum consists of wheatmeal, oatmeal, cornmeal, wheat embryo, yeast, alfalfa leaf, beef bone, iron salt, and sodium chloride.

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The members of the Visiting Surgeon's Club held a meeting at the Bell Memorial (University of Kansas) Hospital in Kansas City on November 15 and 16. The program was as follows: Friday, 8:30 to 1:00—Operative Clinics; luncheon in the hospital; 2:00 to 5:00—Lectures and demonstrations; 7:00—Informal dinner at Mission Hills Country Club. Saturday, 8:30 to 11:30—Operative Clinics; 11:30 to 1:00—Lectures and demonstrations; luncheon in the hospital.

ANNOUNCEMENTS

The American Medical Association radio health program schedule for December is as follows: December 3—Tuberculosis—Dr. Morris Fishbein; December 10—Hunting Accidents—Dr. Morris Fishbein; December 17—Animal Diseases in Man—Dr. W. W. Bauer; December 24—Eat, Drink and Be Merry—Dr. W. W. Bauer; December 31—Pneumonia—Dr. W. W. Bauer.

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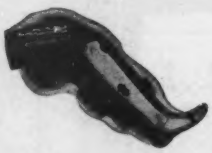
FOR SALE—Fisher F. O. Diathermy $250.00, Type V $175.00, Combination Self Contained Hanovia Alpine and Kromayer Lamps $250.00. Morse Wave Generator Type A 25 $75.00, subject to prior sale. Address A-568 Journal.



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INDEX TO ADVERTISERS

American Can Company	527	Medical Protective Company, The	IX
Balyeat Hay Fever & Asthma Clinic	III	Mid-West Research Laboratory	533
Bilhuber-Knoll Corporation	III	Oakwood Sanitarium	531
Camp & Company, S. H.	XI	Parke, Davis & Company	II
Chesterfield Cigarettes	XIV	Prescription Pharmacies	XII
Cocomalt	IX	Ralph Sanitarium, The	IV
Corn Products Refining Company	V	Riggs Optical Company, The	VII
Grandview Sanitarium, The	XI	Ritter Company, F. A.	533
Hanger, Incorporated, The J. E.	526	Robinson Clinic, The	533
Hynson, Westcott & Dunning	IX	Simpson-Major Sanitarium, The	529
Isle Company, The W. E.	531	Squibb & Sons, E. R.	XIII
Jayhawk Hotel	IV	Stormont Hospital, The Jane C.	XII
Lancaster Optical Company	526	Trowbridge Training School, The	XII
Lattimore Laboratories	529	Tulane University of Louisiana	526
Larson Company, The	531	Woodcroft Hospital	531
Lilly & Company, Eli	X	Classified Ad	526
Mead Johnson & Company	535		

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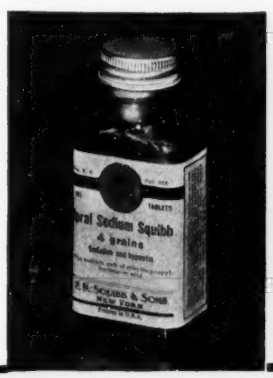

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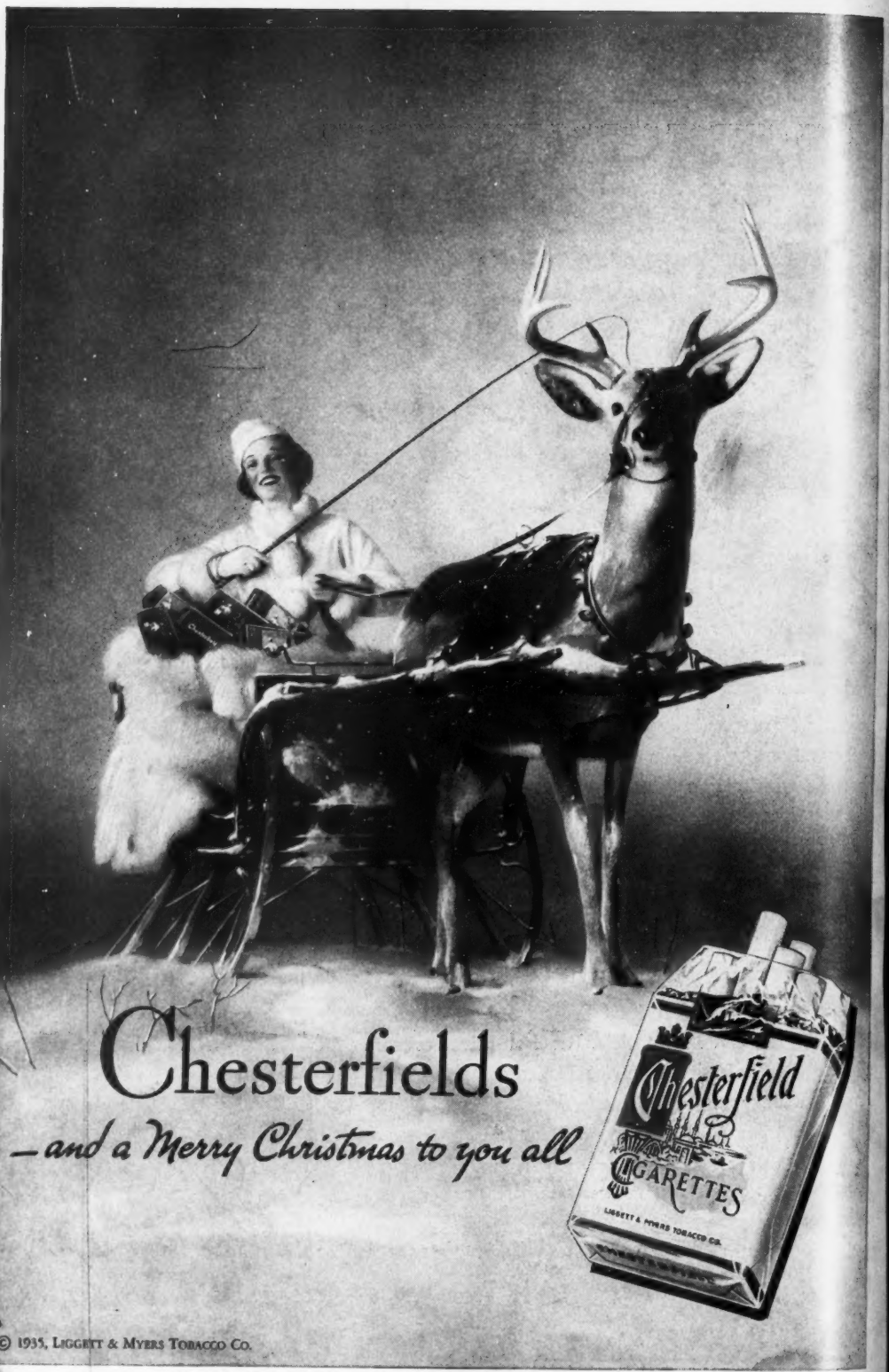

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